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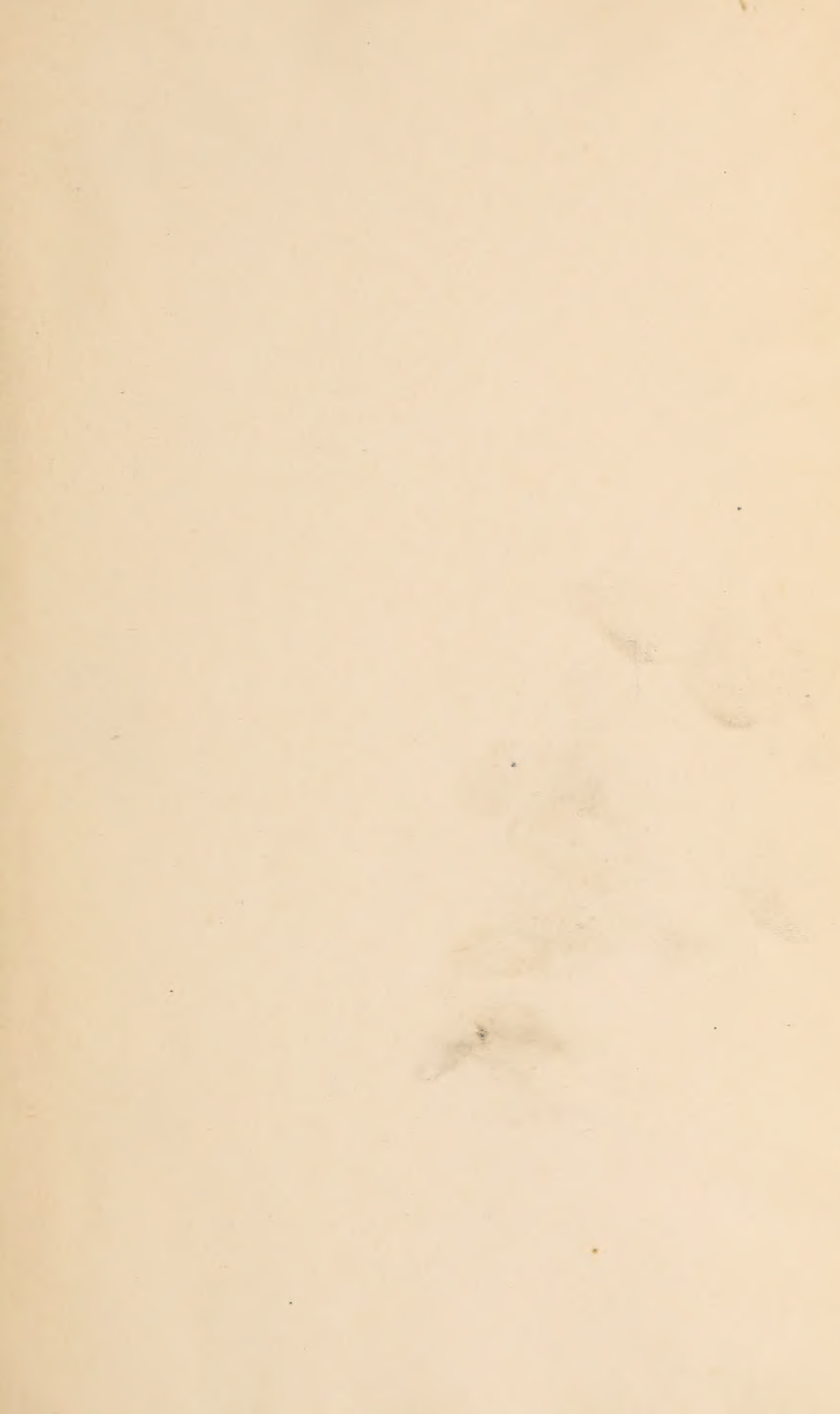
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J. D. EMMET, M. D., AND A. H. BUCKMASTER, M. D.

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THE
AMERICAN GYNÆCOLOGICAL
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JANUARY, 1895.

AUTO-INFECTION.*

BY THOMAS D. DUNN, M. D., WEST CHESTER, PA.

Semmelweis,¹ the father of modern antiseptic midwifery, stated, nearly forty years ago, that "the decomposed organic animal material which causes childbed fever when absorbed, in the vast majority of cases is brought to the individual from without. These are the cases which represent the epidemic of childbed fever; these are the cases which can be prevented." The view thus enunciated is substantially that which is held to-day, if for "decomposing animal matter" be substituted "pus-producing micro-organisms." The study of these germs in connection with suppurative processes and septic disturbances has shown that puerperal diseases are not to be classed as different and separate affections. The micro-organisms are the same that cause sepsis elsewhere, and the obstetrician, as well as the surgeon has to deal with wound infection. Preliminary to the consideration of auto-infection, a hurried mention of the bacteria found in puerperal sepsis² seems necessary. As in wound infection the streptococcus pyogenes is present in the severer forms, but the staphylococcus aureus, as in other parts of the body, may cause infection.

Döberlein,³ in 1887, reported an epidemic of puerperal fever in Leipsic, in which streptococci and staphylococci were combined. The organisms of putrefaction, not so much as pus-producers as from the absorption of the resulting poisonous ptomaines are thought to give

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

rise to puerperal affections. Matthews Duncan has applied the term *sapraemia* to this class of cases, but Bumm⁴ and von Franque⁵ claim it is rare, they having found streptococci in the lochiæ of cases considered clinically typical ones of sapraemia. Gonococci have been found by Krönig⁶ in pure cultures from the secretion of a number of cases in which slight fever existed during the puerperium. In four cases under my care, in which there were pain, fever and a muco-purulent discharge, although no examination for gonococci was made, my suspicions were confirmed by the presence of gonorrhœa in the husband. Von Franque⁵ has reported a mild case of puerperal infection in which he made a pure culture of the colon bacillus, and Heyse⁷ found in a case of puerperal tetanus the bacilli of tetanus. It will thus be seen that a variety of micro-organisms may produce puerperal infection, and it will not be doubted that in a large majority of cases they are carried into the genital tract on the hands or instruments of the accoucheur and he, as said before deals with wound infection.

The most important question which has been discussed for some time is whether this is the only cause of infection, or if infection may come from organisms present in the genital canal or uterus previous to examination. In other words, is infection always the fault of the attendant, or sometimes the result of poison previously introduced? Semmelweiss recognized so-called auto-infection in the following statement: "In rare cases the decomposed organic animal material which causes childbed fever when absorbed is produced within the borders of the affected organism; these are the cases of auto-infection and can not all be prevented."

Strictly speaking, auto-infection as conceived by him and others is impossible. The supporters of auto-infection to-day believe that, in a small percentage of the cases of puerperal fever, the pathogenic organisms having been introduced into the birth-canal during pregnancy, remain in a latent state until confinement, and being absorbed in the wounds following labor cause septic poisoning, this being simply a variety of external infection. The opponents deny the existence of infection from this source, and attribute all cases of infection to the introduction of germs from without by careless attendants during labor. The upholders of either side of this question agree as to the value of thorough external disinfection, but the auto-infectionists claim that better results are attained by the addition of judicious internal disinfection before and after labor. Many arguments have been brought forward by the supporters of these views. Before a bacteriological study of the genital secretions was made, it was observed that

the measures used by surgeons to prevent wound infection were not so successful in puerperal cases. The proof of auto-infection must rest in the presence of pus-producing organisms in the secretions of the birth-canal in pregnant women not previously examined.

The results of the earlier investigations were often contradictory. Kehrer⁸ and Karewski⁹ found in the lochia of healthy women substances which, when injected into animals, produced suppuration. They therefore concluded that a woman might infect herself.

Gönnor,¹⁰ who is supported by Thomen¹⁴ and Samschin,¹⁵ noted the absence of pathogenic organisms in the cervix and vaginal secretions of thirty-one pregnant women—the organisms found were harmless, and there was no danger from auto-infection.

Döberlein obtained the lochia from the uterus, and in febrile cases he found streptococci, but not in non-febrile cases.

The following year (1888) Winter¹¹ confirmed the observations of Döberlein. He cultivated streptococci and staphylococci from the vaginal secretions of non-pregnant women, but they were absent from the uterus, and he concluded, with Döberlein, that auto-infection is possible.

Ott¹² also substantiated the work of Döberlein and Winter. Czerniewski¹³ found virulent streptococci in the lochia of fifty-seven puerperal cases with fever, but in only one of seventy-seven non-febrile ones.

Steffeck¹⁷ reports the presence of pus-producing micro-organisms in forty-one per cent. of the twenty-nine pregnant women examined, as was verified by the inoculation of animals.

Burgubura¹⁶ examined twelve healthy, untouched pregnant women. In two cases he found staphylococci, in one streptococci, and he believes one must attach importance to the secretions.

Döberlein,¹⁸ in his book on vaginal secretions, attempts to explain the apparently different results of good observers. His work comprises the examination of a hundred and ninety-five cases, from which he notes the following differences between a normal and a pathological secretion. The normal is a whitish material, of the consistence of clotted milk, and has a decided acid reaction. It contains a long bacillus, epithelial cells and a few yeast cells. The pathological secretion is of a yellowish or green color, weakly acid, neutral or alkaline reaction. He also found it to contain bacilli, cocci, epithelial cells and leucocytes. Of those examined 55.3 per cent. were normal and 44.6 per cent. pathological. In ten per cent. of the latter he found the streptococcus pyogenes, which proved pathogenic in one half the cases inoculated.

Williams¹⁹ substantiates the results of Döberlein in a report of the examination of fifteen pregnant women. In four cases normal secretions were found, in two cases vaginal bacilli and unidentified cocci, in one case no growth appeared on media, in eight cases pus-producing micro-organisms were found, three of which contained streptococci, and the reaction was altered as noted by Döberlein. Inoculation experiments gave negative results.

On the other hand Krönig has this year published the report of one hundred aseptic women at the period of labor. He found the streptococci most frequently, and but seldom staphylococci. After considering the reaction of the vaginal secretion which in three hundred pregnant women he found to be distinctly acid, he concludes that in pathological conditions the secretions attain a much higher degree of acidity, so that the streptococcus could not thrive therein; at least he was unable to obtain cultures of this germ. The author further concludes that the vaginal secretions of untouched pregnant women contain nothing aseptic, the thrush and gonococcus germ excepted, and such vaginae are therefore aseptic.

He considers vaginal injections of antiseptics dangerous in the ordinary patient as they may lessen chemically the resistance of tissues to bacteria, and increase the intensity of septic endometritis by washing bacteria into the uterine cavity. Döberlein,²¹ who is a distinguished pathologist as well as obstetrician, in the same journal reviews the work of Krönig, and questions the reliability of his tests for alkalinity as well as his culture media. He offsets the investigations of Krönig by his own as confirmed by Williams of Johns Hopkins and Burgubura, and cites Burkhardt's recent and most careful investigations made at the request of Fehling on material at the Basle clinic.

Out of one hundred and sixteen pregnant women examined, sixty-nine, or fifty-nine per cent., had the normal acid milk-white secretion described by Döberlein. In thirty-two cases he found pathological secretions. In twenty-seven per cent. the secretions were of a dirty yellow color, feebly acid, neutral or alkaline reaction, and contained leucocytes and pathogenic bacteria. In five, or 4.3 per cent. he found streptococci, four per cent. being the percentage Döberlein observed. Out of forty-four cases with normal secretions, 22.7 per cent. had abnormal puerperium, while of twenty-six cases with pathological secretions, 57.7 per cent. had trouble. He concludes that the difference between normal and pathological vaginal secretions is of the greatest importance, and the latter must be combated by thorough prophylactic disinfection.

On the above authority we may safely conclude that pathogenic organisms are found in the birth-canal of a decided percentage of women who have not been previously examined; in other words auto-infection is possible. The frequency of these organisms in the vaginal secretions is out of all proportion to the number of cases of childbed fever, and other conditions favoring development, not yet ascertained, must be looked for. I wish to refer briefly to a case bearing on the subject of auto-infection, reported at the June meeting of this Society.²¹ The septic chill developed five hours after delivery. Death occurred on the tenth day—septic arthritis having appeared on the sixth. The child was ill in twelve hours after birth. Septic arthritis developed on the third day and death on the sixth. The previous condition of the mother and the disease of the endometrium after delivery, together with the rapid development of septicæmia in mother and child point to previous infection. Haven has recently reported a case of puerperal sepsis (*Boston Med. and Surg. Jour.*, February 8, 1894) in which the chill took place twelve hours after labor. He believes the woman was in a septic condition at the time, as shown by the rapid development of the disease. The colon bacillus was found to be the cause.

At the height of the antiseptic wave, both internal and external disinfection of puerperal women were carried to such extremes that they became burdensome and even injurious. One French writer (quoted by Garrigues²²) went so far in his antiseptic zeal, as to require bichloride injections for four weeks before delivery. The last two weeks they were given every other day, and the vagina tamponed with iodoform gauze. Mermann²³ has reported nine hundred cases of labor with but one death, and that the result of rupture of the uterus. He practices only subjective antisepsis, and found that the fever cases were reduced from twenty-one to six per cent. since the discontinuance of the vaginal douche. He concludes that painstaking antiseptic measures applied to external parts gives a mortality practically *nil*. Leopold and Goldberg plead for the restriction of vaginal examinations to abnormal cases, depending upon abdominal palpation, and would limit the vaginal douche to operative cases. In normal cases their tables show that where no vaginal douches were used the puerperium was best.

On the other hand, Price, of Preston Retreat, Philadelphia, had to January 1, 1894, over thirteen hundred cases of labor without a death from sepsis. He requires thorough external disinfection, and a single bichloride vaginal douche before and after delivery.

Boyd, of the Philadelphia Lying-in Charity, tells me that in one

thousand cases they have had but five deaths—none from sepsis. A hot bath of soap and water, evacuation of the bowels by means of injection of soap and water, and a bichloride douche before and after delivery comprise the disinfection. These results are especially good for a teaching maternity, where over two hundred and fifty students have been taught during this period.

Garrigues²² of the New York Maternity, uses practically the same prophylactic measures. Five years prior to January 1, 1891, there were 3,170 deliveries with thirty deaths; seven succumbed to sepsis, being less than one fifth of one per cent. McLane²⁵ of Sloane Maternity, reports one thousand consecutive cases with six deaths, one from sepsis, or one tenth of one per cent.

Frommell²⁶ believes in an internal injection of bichloride as a prophylaxis of puerperal disease. He finds no increase of sepsis from frequent examination by students in his clinic when this precaution is taken. When he relied on external disinfection puerperal infection occurred.

C. Godson²⁷ of London, refers to the improvement in the mortality of his hospital. From January, 1880, to January, 1884, it was over three per cent. In the six years from January, 1887, to January, 1893, the mortality was three tenths of one per cent. Every parturient patient received a vaginal douche (1 to 2,000 sublimate), and a second at the termination of labor.

Hoffmier²⁸ advocates the disinfection of the birth-canal before delivery, and shows from the comparison of statistics of the Würzburg clinic with those of others that it is not a source of danger to the mother, but, on the contrary, even with the examination of students, it diminishes puerperal disease.

Eberhart²⁹ of Cologne says the preliminary vaginal douche, which he employed while assistant in the Kaltenbach clinic, he still uses in the hospital and in private practice with the best results.

It would seem from the results of Mermann, Leopold and Krönig, that pathogenic organisms do not play as important a part in the infection of puerperal cases as we would expect from the bacteriological investigations recorded.

But this is common with wound infection as seen by the surgeon. The mere presence of these germs does not mean a septic wound. This has been clearly shown by Welch and Howard,³⁰ who introduced, without suppuration, virulent cultures of staphylococcus aureus into blood-clots of wounds that had been treated antiseptically.

As suggested by Williams, it is possible that certain conditions are

necessary for the production of infection of which we are ignorant—that certain products are wanting in these organisms in the vagina that those introduced from without possess. He also calls attention to the fact that the mechanism of labor, comprising the gush of amniotic fluid, passage of the closely fitting child, the flow of blood and the removal of the placenta, is admirably adapted to cleaning out the genital tract. This doubtless explains partially the comparative infrequency of infection from pathological secretions.

The routine use of the single ante-partum and post-partum vaginal douche is certainly not harmful, as shown by the remarkable results in the lying-in institutions herein referred to.

In so far as it leads to careless external disinfection of patient and attendants it is capable of doing harm both in hospital and private practice, for it is better to have thorough external antisepsis without internal disinfection, than to have thorough internal with neglected external measures.

Notwithstanding the unusual statistics of Leopold and Merrmann, it is the opinion of the writer that the weight of evidence, both from a clinical and theoretical standpoint, favors judicious internal disinfection particularly in hospital practice. In private practice where the secretion is known to be pathological, or where there is a suspicion of gonorrhœa, as well as in instrumental deliveries, the vaginal douche before and after delivery should be used. In normal cases, where ordinary cleanliness exists, the best results will probably be obtained from thorough external disinfection, at least the vaginal douche is unnecessary.

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THE MORBID CHANGES IN THE PUERPERAL ENDOMETRIUM DUE TO LOCAL INFECTION, AND THEIR RELATION TO GENERAL SYMPTOMS.*

BY W. REYNOLDS WILSON, M. D.

The modern treatment of early infection in the puerperal state illustrates the theory of its origin. The point of attack has been proved to be the endometrium by the efficacy of treatment when applied to the cavity of the uterus in relieving the general symptoms.

According to the classification of Bumm (1) there exist two primary forms of puerperal endometritis: putrid and septic. Inasmuch as the developed manifestations of septic forms of endometritis demand surgical intervention and are more properly considered in the surgical discussion of the subject, we shall confine our attention to the origin of septic infection in the endometrium and to the local morbid changes due to putrid infection.

Septic endometritis occurs in two forms: First, a localized septic process in which a granulating zone, shutting off the necrotic endometrium and preventing the invasion of germs, is present. The uterine lymphatics are not actively involved. The placental site, as in the putrid form, is most markedly affected. Secondly, a septic endo-

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

metritis, accompanied by a general infection. Bumm has studied five cases belonging to this class, and has found in three instances that infection has occurred by invasion through the lymphatic system, and in two instances along the course of the veins. In the first set of cases examination shows the placental site free from micro-organisms and thrombi; the lymphatics generally exhibit accumulations of streptococci and staphylococci which penetrate directly to the peritonæum. In the second set of cases only the smaller lymphatic branches surrounding the sinuses are marked by colonies of cocci; from these isolated lymphatic channels the accumulations of cocci penetrate to the larger lymphatics underlying the peritoneal covering of the uterus. The decidua is disorganized and infiltrated with a fibrous exudate presenting a diphtheritic appearance. In this class of cases, as well as in that just described, the granulation zone is absent. This fact has evidently an important bearing upon the function of such a zone of demarcation, in combating the progress of micro-organisms into the underlying tissues.

Although putrefactive germs may be present in all forms of septic endometritis they do not predominate, consequently fœtid lochial discharge, the sign of necrotic decidual tissue and disorganized thrombi, usually do not accompany the more active septic processes.

The active cause of puerperal septic infection attacking the endometrium is the presence of the pyogenic cocci (so called), namely, *Streptococcus pyogenes aureus*, the *Staphylococcus pyogenes aureus* and *albus* and the *Streptococcus erysipelatus*.

These germs attack the endometrium upon the placental site or at points of denudation the result of lacerations about the cervical canal; abrasions and contusions of the vulva and vagina are less likely to communicate the infecting material to the general circulation on account of the less active lymphatic circulation from these parts owing to the comparatively moderate development during pregnancy of the lymphatic vessels accompanying the pudic and uterine vessels, in distinction to the active development of those corresponding to the ovarian vessels running to and from the fundus of the uterus.

The causes which predispose to local infection, inasmuch as they act as preparatory influences in their effects upon the endometrium, are, first, the earlier local changes due to former endometritis (notably the presence of infecting cocci in a dormant state); second, the constitutional character of the gravida, determining the power of resistance of her tissues to infecting elements; third, the degree of uterine

contraction; fourth, puerperal hæmorrhage; fifth, the presence of gonococci and the resulting local changes due to them.

As to symptoms we find by examination in localized infection abdominal tenderness and imperfect involution, the uterine tumor presenting an abnormally yielding consistence. Internal examination by means of the speculum reveals a cervical portion covered with patches of discolored deposit (diphtheritic) alternating with areas of necrosis and granulation. The vagina is reddened, glazed and sensitive to the touch. Among the general symptoms we have those of a mild irritative fever often marked by roseolous eruptions over the chest and neck, together with the presence of fœtid lochia. In the acute form of infection with active lymphatic absorption there are present either the symptoms dependent upon peritonitis or those due to the active absorption of septic germs and their products, including pyæmia among these symptoms.

In discussing the putrid form of endometritis it will be better to use the term necrotic endometritis, as the germs of putrefaction are only active in an environment of unorganized tissue. We shall also speak of saprophytes as mycotic organisms in contradistinction to their parasitic classification.

The general symptoms accompanying necrotic endometritis are those which are classed under the head of sapræmia. A careful study of the pathology and ætiology of sapræmia will throw important light upon the development of these symptoms. In the broadest sense the cause of necrotic endometritis is the retention of putrid material within the uterus. This may be in the form of decidual *débris* or of putrid fœtus; it may be the result of sloughing following pressure, or of the previous condition of the endometrium, as in carcinoma or the various forms of non-puerperal endometritis. As to the pathology we have to deal with, first, a general necrotic condition of the endometrium, and secondly, a condition of necrosis localized in the placental site. The remnants of decidua retained within the uterus, the placental *débris* and the thrombi which project from the placental site are prone to putrefactive changes in the presence of saprophytes. Histologically we detect a necrosis of the epithelium and basement membrane, the necrotic tissue being cut off by an inflammatory zone of small-celled infiltration extending into the muscular layer and choking of the lymph spaces. In other words this zone of reaction acts as a barrier against the products of putrefactive change; as a result of this we find that of all forms of puerperal endometritis this form is most distinctly localized in its effect. The only point where this

protection is weakened is at the placental site. Invasion of the thrombi occurs here owing to the want of organization of the thrombotic tissue. At this point the sinuses become filled with necrotic material and the lymphatics surrounding them act as channels for the absorption of the bacterial and degenerative products of putrefaction. In this instance it is incorrect to speak of the process as an endometritis, as the muscular layer is involved in the process and the condition is better described as a metritis. A less frequent mode of invasion of putrid germs producing metritis is that by which the micro-organisms are absorbed from necrotic areas in the lower segment of the uterus and cervix the result of lacerations during parturition.

Unfortunately the bacteriology of putrid infection has not been worked out to the same extent to which the study of septic infection has been developed. We are led by recent researches however to include many of the so-called non-pyogenic germs, among the pus-producing organisms. For instance within the last few years the specific germs, such as, the bacillus typhosis, and the *Diplococcus pneumoniae*, as well as the *Bacterium coli communis*, (2) also the saprophytic germs, the *Micrococcus tetragenus* and the *Bacillus pyogenes foetidus*, (3) have been classed as pyogenic organisms. We are further confronted by the fact that certain chemical substances under peculiar circumstances are capable of producing suppurative processes, as proved in the case of putrescin and cadaverin.

Associated with this pathological condition we have the symptoms characteristic of two degrees of putrid infection or sapræmia, the mild and the grave form. In each case the morbid manifestations outside of the local condition are usually those due to a toxæmia, although, as noted above, the products of putrid changes may be capable of producing suppuration as in septic infection, so that at the present point to which recent investigation has led us we are not able to divide the sapræmic and septic infections distinctly as to their cause. The pathological changes, both local and general are certainly distinct, but the chemical and bacterial products of sapræmia, on the one hand, are capable of producing suppurative changes analogous to those found in septic infection, while on the other hand the mild infections characterized by parametritic infiltrations and local accumulations of the pyogenic cocci are sometimes due to a mixed infection (putrid and septic) in which the irritative disturbance depends as much upon the chemical products of putrefaction as upon the presence of septic germs.

The grave septic conditions are often unaccompanied by symp-

toms of local putrid changes, such as fœtid lochia and the discharge of necrotic decidua. In this case the lymphatics have actively absorbed the septic products and the local reactionary changes (small-celled infiltration and the formation of a dense inflammatory zone) have been moderate. In fact it appears to be the rule that where we take into account the seat of infection and the systemic action the result of infection we find the latter more pronounced in cases where the local changes have been of a mild nature. It has been suggested that the preponderance of the general over the local changes depends not so much upon the products of the bacterial elements set free at the point of infection, namely the ptomaines, as upon the death of the plasma contents of the bacterial cell itself the result of the combative qualities of the local cells (4). Abbott however states: "We are not as yet in a position to say definitely to which of these influences the death of the tissue is due, or, indeed, that it is, when occurring spontaneously, the result of the action of the one to the exclusion of the other." He believes that the local necrosis occurring in suppuration is dependent upon both the poisonous products of growth of the living bacteria and the poisonous activities of the proteid constituents of the dead and disintegrating bacteria.

In conclusion it is important to note that putrid changes at the seat of infection have an important bearing upon the spread of infection, rendering the septic germs more active than they would be in attacking tissues unaffected by necrotic and putrefactive changes. In other words, the saprophytes, with or without causing symptoms of intoxication, may render the individual receiving them more susceptible to infection from other bacteria (5, 6). This fact bears upon the cases in which putrid changes in the endometrium accompany the grave symptoms of septic infection, such as those due to metrolymphangitis and peritonitis.

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PUERPERAL SAPRÆMIA.*

BY EDWARD P. DAVIS, A. M., M. D.

The parturient patient is exposed to animal poisons not only in the form of infective germs conveyed to her by her attendants, but also from certain toxins which accompany the process of putrefaction. Injuries occurring during labor render the tissues of the birth-canal in a peculiarly favorable condition for putrefaction, while foetal death places within the body of the patient a mass of tissue ready to putrefy, and affording favorable material for the development of bacteria. A recent work upon pathology (Hamilton) calls attention to the fact that a patient may absorb toxins secreted by germs growing upon a putrefactive focus before these germs have themselves found their way into the blood. Such a condition of poisoning is termed *sapræmia*. The causes of this condition are those which produce necrosis of tissues, and introduce into these necrotic tissues infective germs. The fate of these germs will depend very much upon the condition of the patient's blood-serum. In some, the bacteria of suppuration grow luxuriantly, and abscess formation and *pyæmia* promptly follow: in others, while bacteria may flourish upon the patient's tissues, they fail to increase rapidly in number. The products secreted by these bacteria comprise the toxins of *sapræmia*.

Practically speaking, *sapræmia* is most often observed after tedious labor in which injury to the soft parts of the mother has taken place.

In fifty-three cases Winter observed twenty-five in women having contracted pelvis: thirteen had abnormal presentation of the foetus, and in but six cases were the pelvis and maternal soft parts normal. Labor was terminated in but one of these cases in twelve hours, the remainder continuing from twenty to one hundred hours in parturition. Close observation of the interval elapsing between the end of labor and the first symptom of poisoning shows that the danger of absorption begins ten hours after labor. Ahlfeld enables us to judge of the comparative influence of various obstetric operations upon the production of *sapræmia*, by his table, from which we learn that manual removal of the placenta and membranes is most apt to be followed by *sapræmia*. Next comes perforation and extraction, then prolonged

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

forceps delivery, and least dangerous are induced labor and version and extraction.

A familiar example of this disorder is seen in cases delivered spontaneously, where the patient may remain for some time without proper attention: these patients usually inhabit dirty dwellings which, with their contents, furnish abundant growths of the less poisonous bacteria. Very often it will be found that the patient has been subjected to examination without antiseptic precautions: in other cases, the patient has remained exempt from examination, but lying upon a bed anything but clean, and in surroundings best calculated to further the growth of bacteria. In some of these cases, hæmorrhage, by impoverishing the patient's blood, has rendered her peculiarly susceptible to rapid absorption.

An excellent clinical description of sapræmia is that given in 1880 by Matthews Duncan* who calls attention to the rapid effects following the absorption of sapræmic poison, and also to the prompt subsidence of the symptoms. The clinical signs of sapræmia are a foul discharge, fever, rapid pulse, with usually tenderness over the uterus. Rigors and delirium are present in severe cases. Pain is not a pronounced symptom; constipation or diarrhœa may be present, generally the latter. The comparatively sudden onset of the disorder, and the rapid pulse, give evidence of a toxæmic poison quickly absorbed, rather than the gradual development of bacteria. The pathology of this affection has been well studied by Bumm;† microscopic sections from the endometrium of such a patient show the outer layer of the endometrium swarming with bacteria, while just internal to this layer we find an abundant round-cell formation of granulation tissues which is the rampart thrown out by Nature to prevent the further penetration of invading micro-organisms.

Ahlfeld‡ in his excellent description of this form of puerperal sepsis makes the statement that in well-conducted Maternities, the number of cases of fever from auto-infection and sapræmia occurring during the puerperal period is greater than the number of cases having fever from direct contagion. He further remarks that the mucous membrane of the uterus absorbs with extraordinary vigor its septic contents, the poison most often entering through the cervix and endometrium, and that next in rapidity of absorption is the mucous

* Matthews Duncan, *Lancet*, October 30 and November 6, 1880.

† Bumm, *Archiv f. Gynäk.*, 1891, Bd xl, Heft 3.

* Ahlfeld, *Zeit. f. Geb. u. Gynäk.*, 1893, Bd. xxvii, Heft 2.

membrane of the vagina. His experience shows that the poison thus absorbed is often rapidly eliminated, frequently by the kidneys. Pathogenic germs present in the genital tract before labor find a favorable culture medium in the decomposing fluids of the vagina and uterus. Winter,* in describing the sudden occurrence of absorption and fever, narrates a case in which a sharp chill followed incision into the cervix. The pulse is remarkable in these cases for its rapidity which is not in proportion to the temperature curve. The patient first complains of sensations of heat, headache and languor, followed by sweating, and often diarrhœa: the prognosis, with these symptoms, Winter considers favorable, if the cases are taken promptly in hand.

The differential diagnosis of sapræmia in contrast with septicæmia and pyæmia may be stated briefly as follows: In sapræmia, the symptoms are those of the decided effect produced by the sudden absorption of a toxine: in septicæmia, the absorption is more gradual, and is aggravated by the rapid development of septic germs. These germs, proceeding from the uterus to its surrounding tissues, form the foci of infection in the various organs of the body. The course of the case of septicæmia is more gradual, the fever showing remissions and exacerbations. In pyæmia, the symptoms of septicæmia are further increased by the signs and symptoms of abscess formation: embolism and thrombosis cause multiple abscesses in the viscera or joints.

The treatment of sapræmia should be prompt and thorough. As the retained and decomposing tissue, from which are absorbed the toxines producing the disorder, is in the birth-canal, the first step is to effectually empty and cleanse this region. Matthews Duncan advises the introduction of the fingers within the womb, or that tenaculum-forceps be inserted, with which the obstetrician may endeavor to grasp retained and decomposing material.

For cleansing and emptying the uterus, the finger may be well replaced by the intra-uterine puerperal curette: as this is a douche-curette, the obstetrician is enabled to cleanse and antisepticize the cavity of the uterus while removing retained and decomposing material. Such a curette should be large, with an edge no sharper than that of a good paper-cutter, and made entirely of metal. Reference to the histological studies of Bumm illustrates the effort which Nature makes to prevent the penetration of micro-organisms into the lymph-spaces of the uterus by forming a layer of granular cells beneath the germs. Remembering this fact, it is well for the obstetrician not to

* Winter, *Zeit. f. Geb. u. Gynäk.*, Bd. xxiii, Heft 1, 1892.

remove this layer of tissue with the curette, but to content himself with scraping the interior of the uterus with a blunt instrument, thus washing away bacteria and *débris*, while avoiding the opening of the lymphatics and blood-vessels of the uterus. In cases of sapræmia, this cleansing of the womb may often be done without an anæsthetic, as there is not in these cases the acute pain of beginning peritonitis. The antiseptic agent to be employed in this cleansing is, preferably, one of the phenols; carbolic acid, creolin, lysol, kresin or trikresol may be used: trikresol has the advantage of being colorless, exceedingly efficient, and free from poisonous effects, if used in solutions of one half to one per cent. At least a half gallon of the hot antiseptic solution should be employed, the douche-curette thoroughly but gently scraping the interior of the womb, while the antiseptic fluid thoroughly flushes the diseased tissue. It is unnecessary to use a tenaculum-forceps to grasp the uterus in these cases, and a speculum is also superfluous: the hand upon the uterus above the pubes can best appreciate the impact of the curette. There is no trouble in these cases in securing the prompt reflux of the antiseptic without the use of an intra-uterine catheter: the fluid will return freely alongside of the curette.

A comparative estimate of the value of sublimate and the carbolic substances in the treatment of sapræmia may be gained from the examination of a series of cases in which it is shown that of those patients who received sublimate douches, twenty-five per cent. had a normal puerperal period: of those who were treated by disinfection with carbolic acid, thirty-nine per cent. speedily recovered from sapræmia, and had a normal puerperal period. Following the antiseptic cleansing of the uterus, which should be done in the most thorough manner, it is advantageous to pack the uterus with iodoform gauze, or to leave within the uterine cavity a suppository containing sixty grains of iodoform, aristol, boric acid, or iodol. The further antiseptic treatment of the case consists in cleansing the external parts three times in twenty-four hours with sublimate solution (1 to 2,000), and in keeping a sublimate occlusion dressing over the vulva. If the disinfection of the birth-canal is thoroughly done, it will rarely be necessary to repeat it; should, however, exacerbation of fever indicate fresh absorption, the treatment should be repeated. In addition, the lymphatics of the peritonæum should be thoroughly drained by saline purgation, and a copious amount of normal saline solution be given to the patient either by transfusion, by the mouth, or by copious rectal injections. Strychnine, ergot and alcohol are valuable aids in assisting the patient to resist the poison.

Sapræmia may seriously complicate labor where parturition is prolonged, and may furnish a positive indication for the speedy delivery of the patient. Interference in these cases is indicated not only in the interests of the mother, but in the interests of the child. Observation has shown that twenty-two per cent. of children during whose birth sapræmia occurs, perish from intra-uterine poison ; if observation of these cases be further extended to the ultimate results of this intoxication, a foetal mortality of thirty-five per cent. has been recorded, as children who may survive birth in these cases perish subsequently of septic pneumonia, umbilical infection and septic disorders of the blood. The symptoms of sapræmia during labor are those already described in the puerperal patient. Spontaneous labor usually ceases, or uterine contractions become markedly deficient. In view of the increased risk to the child, it is well to deliver the mother in these cases with the least possible risk to herself, version, or the forceps being indicated. Increased risk in symphysiotomy occurs in these cases from the dangers of septic absorption in the symphysiotomy wound. In highly contracted pelves where labor is complicated by sapræmia, the child should be delivered by abdominal incision, followed by amputation or removal of the uterus.

The prognosis of post-partum sapræmia depends greatly upon the promptness with which the condition is treated. In fifty cases of this disorder, Winter had four deaths : nineteen of these cases had a normal puerperal period after the thorough cleansing of the uterus : twenty-seven had fever during their recovery. The prognosis of labor complicated by sapræmia also depends very largely upon the good judgment and skill of the obstetrician : when the condition is recognized, and the patient promptly and skillfully delivered, her chance for recovery should certainly be but little imperiled by this complication : when, however, she is allowed to linger in impossible labor, or is subjected to fruitless and violent interference, as in repeated forceps applications in contracted pelves, the mortality rate becomes high.

PUERPERAL PELVIC CELLULITIS AND PUERPERAL PERITONITIS.*

BY CHARLES P. NOBLE, M. D.,

Surgeon in Chief, Kensington Hospital for Women, Philadelphia.

In considering what I shall say concerning these subjects in the ten minutes allotted to them, I find myself embarrassed by the wealth of material at command, so that it will be necessary to make merely a brief summary of the facts. I have recently addressed the Society upon the subject of puerperal pelvic cellulitis, and on June 2, 1892, in the discussion on the paper by Dr. Davis, I fully set forth my views concerning the treatment of puerperal peritonitis. As my own experience had not led to any alteration of opinion, I felt that it would be more profitable for the Society, if I should make a collective investigation concerning these subjects, so that the Society could have the benefit of the experience and opinions of the eminent gentlemen interviewed, and that my own opinions would be corrected by the result of this investigation. Accordingly, I sent letters of inquiry to many eminent gynæcologists and obstetricians, and received replies from thirty of them.†

PUERPERAL PELVIC CELLULITIS AND TRUE PELVIC ABSCESS.

The time has now arrived when the profession is prepared to determine the nature, the course and the importance, of this condition. Under the influence of the doctrine of Nonat and Emmet, concerning

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

† Dr. W. M. Polk of New York, Dr. Egbert H. Grandin of New York, Dr. Andrew F. Currier of New York, Dr. J. H. Carstens of Detroit, Dr. James H. Etheridge of Chicago, Dr. Howard A. Kelly of Baltimore, Dr. Edward Reynolds of Boston, Dr. A. L. Smith of Montreal, Dr. Robert A. Murray, Dr. Hermann J. Boldt of New York, Dr. J. H. Kellogg of Battle Creek, Dr. W. E. B. Davis of Birmingham, Dr. Malcolm McLane of New York, Dr. Henry C. Coe of New York, Dr. R. S. Sutton of Alleghany, Dr. B. C. Hirst of Philadelphia, Dr. J. M. Baldy of Philadelphia, Dr. E. E. Montgomery of Philadelphia, Dr. S. C. Gordon of Portland, Dr. J. C. Edgar of New York, Dr. J. R. Chadwick of Boston, Dr. E. W. Cushing of Boston, Dr. Paul F. Mundé of New York, Dr. W. R. Pryor of New York, Dr. William H. Baker of Boston, Dr. M. D. Mann of Buffalo, Dr. Archibald MacLaren of St. Paul, Dr. E. C. Dudley of Chicago, Dr. J. Whitridge Williams of Baltimore, Dr. R. B. Maury of Memphis, Dr. H. D. Fry of Washington, and Dr. A. Palmer Dudley of New York.

the nature of pelvic inflammation, the profession was blinded as to the real nature of this condition. The reaction came when this theory as a whole was shown to be false, largely by the labors of Lawson Tait and those who followed him ; and some prominent gynæcologists took the extreme ground, that pelvic cellulitis and pelvic abscess did not exist, except as a secondary consequence of tubal or ovarian inflammation. On April 5, 1894, I reported to this Society five cases, in which a diagnosis of puerperal pelvic cellulitis, or true pelvic abscess, had been verified by abdominal section ; and I am now able to add to these five cases sixteen others, occurring in the hands of such competent men as our President, Dr. Hirst, as Drs. Boldt, Polk and Coe of New York, Dr. Etheridge of Chicago, Dr. Kelly of Baltimore, Dr. MacLaren of St. Paul, Dr. Cushing of Boston, and Dr. Mann of Buffalo. These cases have all been reported to me by a personal letter, together with an explicit statement that the diagnosis was confirmed by abdominal section, and that in these cases the uterine appendages were either entirely normal, or were at the most but slightly diseased. Many of my correspondents reported that they had met with cases of puerperal pelvic cellulitis, or as several of them preferred to call it, puerperal pelvic lymphangitis, but that they had not confirmed the diagnosis by abdominal section, as either the cases recovered without operation, or the pelvic abscess was attacked directly by incision, without opening the peritoneal cavity. It is interesting to me to be able to report, that in one of the cases furnished by Dr. MacLaren, the cellulitis followed an operation for laceration of the cervix. It was supposed that a pus tube had formed, due to an infection during the operation, and an abdominal section was made for its removal, when the ovary and tube were found to be entirely normal, and that the condition present was a cellulitis, which subsequently disappeared. The general experience of my correspondents, however, clearly bears out the correctness of the opinion, that pelvic cellulitis and true pelvic abscess are met with, as a rule, during the puerperal state, and that these conditions are surgical curiosities among non-puerperal women.

Instead of entering into a systematic discussion of the clinical history and pathological nature of puerperal pelvic cellulitis and true pelvic abscess, which would require too much time, I shall point out the bearing which the recognition of the existence of these conditions has upon certain mooted points in the treatment of pelvic inflammation in the puerperal state. It serves at once the valuable purpose of fixing the attention of the investigator upon the importance of lym-

phatic absorption in the puerperal state, and upon the lymphatics and blood-vessels as a means for the conveyance of septic poison, as distinguished from the route by way of the endometrium and the Fallopian tubes to the pelvic peritonæum. A just recognition of what this involves gives the cue to the difference which exists between pelvic inflammation and peritonitis, as a complication of the lying-in state, and these same diseases in non-puerperal women. It is because the vital forces are being overwhelmed by septic poison, thrown into the general circulation by way of the lymphatics, or because a progressive, diffused, septic lymphangitis is going on in the pelvic connective tissues, that the prognosis of peritonitis in the puerperal state is so bad, even though diseased tubes, or other abnormal conditions be removed by operation, and the peritoneal cavity be irrigated and drained.

A proper recognition of the status of our subject bears directly also upon the question of operation for pelvic inflammation following labor. First, it must be recognized that a pelvic inflammatory mass found during the puerperal state may be cellutitic, and not intraperitoneal; and this fact should make one the less ready to operate under these circumstances. Also, if the conditions present suggest the presence of pus, there will be a much greater inducement to operate for its evacuation by direct incision, without opening the peritoneal cavity, than would be the case in non-puerperal conditions.

The treatment which I have adopted, has been to open the abdomen to determine definitely whether or not the uterine appendages were involved in the inflammatory process, and then if pus were present to evacuate it by a second incision, made above Poupart's ligament. This method has been uniformly followed by a cure, and is I believe to be commended, except in the case of those who are extremely ill when they come under observation, in which case, as a rule, the pus has made its way along the planes of connective tissue toward the abdominal wall, so that it can be reached by an incision in the groin, or else, in a smaller percentage of cases, it can be advantageously attacked from the vagina.

PUERPERAL PERITONITIS.

At this time I shall consider only certain phases of puerperal peritonitis, as part of the subject has been assigned to Dr. Baldy. Our remarks will cover the subject of peritonitis when it is a complication of lymphangitis or cellulitis, and also those cases in which peritonitis is the result of the injury of pelvic tumors in the course

of labor, or of the bruising or rupture of pus sacs, or other septic accumulations, existing in the uterine appendages at the time of labor. That part of the subject which deals with the septic uterus, and with acute, recent inflammation in the uterine appendages (which were healthy at the time of labor), together with associated peritonitis, will be discussed by Dr. Baldy. As a preparation for these remarks, I looked up all the references in English, in the *Index Medicus* since 1891, and have also replies from thirty of the more prominent American gynæcologists to questions submitted to them. I regret to say that practically no progress has been made in this field within the last three years.

Peritonitis Due to the Bruising of Tumors during Labor.—Puerperal peritonitis due to this cause has long been recognized, being first called to the attention of obstetricians perhaps, when, in order to accomplish delivery, tapping of ovarian tumors was practised *per vaginam* or *per rectum*. In many of these cases septic peritonitis resulted. As this part of our subject is well understood, I shall touch upon it very briefly. Any variety of pelvic tumor (uterine fibroid, ovarian cyst, dermoid, etc.) may be bruised, or have its blood supply cut off by torsion of its pedicle or otherwise, and thus become inflamed or gangrenous, and set up a more or less serious peritonitis. It goes without saying, that operation offers more for the cure of puerperal peritonitis due to this cause, than in any other variety. In cases falling directly under this category, the birth-canal is not infected, the pelvic lymphatics are not involved, and we have to deal only with an inflamed tumor, and with a peritonitis. These are the cardinal points to which attention should be called. Prompt operation, irrigation and drainage, have been followed by a high percentage of cures.

Puerperal Peritonitis Due to the Rupture or Bruising of Pus Sacs, or other Septic Accumulations in the Uterine Appendages, Existing prior to Labor.—This phase of our subject is as yet but little worked out. The references to it in the literature are scanty, and they indicate, in my judgment, that the subject is not fully appreciated. In 1891, in a paper entitled "Salpingitis considered in its Relation to Pregnancy and the Puerperal State," I discussed this subject, and reported three cases, in which the bruising of pus tubes during labor had set up peritonitis. Peritonitis due to this cause is not of frequent occurrence, because, as a rule, women having even one seriously diseased uterine appendage are sterile, owing to coexisting endometritis. Besides the cases quoted in my paper, or referred to, I have personal knowledge of two others occurring in this city. Of my correspondents,

Drs. W. E. B. Davis of Birmingham and Hirst of Philadelphia, have each operated upon one case of peritonitis due to a pus tube, which had antedated labor ; and Dr. Coe of New York reports that he has assisted at such operations. My other correspondents either had no knowledge of such cases, or at the most merely suspected that the diseased tube may have antedated the labor, instead of resulting from infection after labor. This experience of my correspondents is plainly in accord with what we would expect, and I think is conclusive evidence that the practical importance of this variety of puerperal peritonitis is not so great as was anticipated some years ago.

The grave dangers resulting from the bruising or rupture of a diseased uterine appendage during labor, renders the occurrence of pregnancy, in a woman the subject of such conditions, highly undesirable, until the diseased uterine appendage has been removed. Pregnancy and parturition under these conditions are too dangerous to be encouraged, and measures should be taken to avoid conception until the source of danger has been removed.

The relative dangers of puerperal peritonitis of this variety, and the results of operation done for it, can not be determined at this time. The subject is too new, and our experience is too limited for more than inferential opinions. Theoretically the prognosis from operation should be relatively good, because as the uterus and pelvic connective tissues are not involved, the conditions are more nearly those of operation for peritonitis in a non-puerperal woman. At all events, it is a safe conclusion, that the proper method of treatment to be pursued is prompt operation, irrigation and drainage.

Puerperal Peritonitis complicated by Pelvic Lymphangitis or Cellulitis.

—This variety of puerperal peritonitis is undoubtedly more fatal to life than any of the others. The reason for its great fatality is, that very early in the case general septicæmia becomes a marked feature, and very frequently the septic element predominates over the element of peritonitis and local pelvic inflammation. Patients suffering from this variety of peritonitis are very ill from the beginning, and seldom live longer than a week, or at most ten days, after the termination of labor. I find that my correspondents practically agree in regarding this variety of peritonitis as being not amenable to surgery. Most of them report that they have never operated for this condition, and the two who have operated report a fatal result. My own feeling is, that when a case has progressed to the point of the serious involvement of the pelvic lymphatics with septic inflammation, together with more or less peritonitis and marked symptoms of general

Twenty-one Cases of Puerperal Pelvic Cellulitis or True Pelvic Abscess. Diagnosis Confirmed by Cœliotomy.

	Met with pelvic cellulitis, or true pelvic abscess.	Confirmed by abdominal section.	Location of pus.	Condition of uterine appendages.
Malcolm McLane.	Two cases.	Yes (two).	Between the folds of the broad ligament.	In one slightly adherent. In one adherent, but containing no pus. Both cases permanently cured.
E. W. Cushing.	Several cases.	Yes (one).	Do.	Absolutely normal.
Barton Cooke Hirst.	One case.	Yes (one).	Do.	Uterine appendages normal.
Herrmann J. Boldt.	Two cases.	Yes (two).	Both cellulitis, which resolved.	In one normal. In one hyperemic.
James H. Etheridge.	Two cases.	Yes (two).	Between the folds of the broad ligament.	In one uterine appendages absolutely normal. In one "minor" inflammation.
Howard A. Kelly.	One case.	Yes (one).	Behind the uterus by the utero-sacral ligament.	Not involved.
W. M. Polk.	One case.	Yes (one).	Between the folds of the broad ligament.	Catarrhal salpingitis—fimbriae free.
E. B. Cragin,	One case.	Yes (one).	Do.	"Thickened," but contained no pus.
Henry C. Coe.	Two cases; one cellulitis following trachelorrhaphy.	Yes (two).	One between folds of right broad ligament; the other a cellulitis.	Both cases normal.
Archibald MacLaren.	Two cases.	Yes (two).	Do.	Uterine appendages normal in both.
M. D. Mann.	Two cases.	Yes (two).	Between fold of left broad ligament, and between uterus and bladder.	Slightly adherent.
D. Longaker,	One case.	Yes (one).	Between folds of right broad ligament, extending toward false pelvis.	Slightly adherent.
Charles P. Noble.	One case.	Yes (one).	Between fold of left broad ligament.	Adherent, but contained no pus.
Charles Meigs Wilson,	One case.	Yes (one).	Two between fold of right broad ligament. One cellulitis, left broad ligament.	Two adherent, but contained no pus. One ovary and tube removed. One normal.
Charles P. Noble.	Yes, three additional cases.	Yes (three).		

sepsis, that it is useless to operate. An abdominal section reaches such a comparatively small part of the involved area, that it seems to me to be an illogical measure of treatment. If surgery is to be of service in these cases, it must be by prompt interference while the trouble is limited to the uterus or vagina, when by thorough curettement of the uterus and douching of the utero-vaginal canal, the infective process may be cut short, and the life of the patient be saved. If the disease has advanced somewhat further, so that the uterus is thoroughly infected, and infection is spreading to the lymphatics and peritonæum, perhaps the radical operation of hysterectomy may prove the means of saving a certain number of lives.

Prevention of infection and the vigorous treatment of puerperal sepsis in its early stages offer the only rational means of preventing death from the variety of peritonitis under consideration, because when once it is fully developed, the percentage of recoveries is extremely small, and in such cases the favorable result is as often due to unusual vitality on the part of the patient, as to any therapeutic measures employed by the physician. Whisky, feeding, strychnine and quinine, must continue to be our reliance in this class of cases.

NOTE.—Seventeen of my correspondents have operated for peritonitis, either diffused or pelvic, later than the first week of the puerperium. Their results are entirely in accord with the current theories concerning this subject. The cases operated on for diffused peritonitis almost invariably died, and in those that recovered the old question would come up as to the definition of general peritonitis. On the other hand, the operations for localized peritonitis and localized pus accumulations gave very satisfactory results.

This matter, while not properly belonging to my paper, I have appended for its general bearing on the subject.

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REMOVAL OF THE UTERUS AND ANNEXA FOR PUERPERAL SEPSIS.*

By J. M. BALDY, M. D.

Surgical procedures upon the puerperal woman have not until recent years received any considerable encouragement, especially in that class of women who are suffering from acute sepsis. Since, however, a reluctant profession has come to recognize in the vast bulk of cases the local and true cause of puerperal fevers much has been done to obliterate past prejudices in this matter.

During February of 1887 I attended a patient, who presented the following history :

On the second or third day after confinement she had a chill with a quick rise of pulse and temperature, and a tympanitic and tender abdomen. These symptoms abated somewhat and I lost sight of her for several weeks. One month from the date of her confinement I was again summoned to her and found that she had been suffering since I had last seen her. She was at this time so emaciated that I hardly recognized her as my former patient. Her temperature was over 102°, her pulse over 130 ; she was having continued chills and

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

creeps, hectic, night-sweats, and sleepless nights; her abdomen was swollen, tympanitic, and intensely painful, her bowels loose and foetid, micturition and defecation both painful—she was evidently fast approaching death. An examination of the soft parts showed no signs of a recent tear; the uterus was subinvolved, and on the left side there was a large boggy mass, firmly adherent, tortuous, and extremely tender. The right side was tender but no mass could be detected. Abdominal section was advised as the only hope of saving life, and the proposition was eagerly accepted by both the patient and her friends. At the operation the left tube and ovary were both found adherent and distended with pus and were removed. The patient made a speedy and thorough convalescence.

Schröder had held that septic endometritis did not extend to the tubes, *as a rule*; but he qualified this opinion by following it up closely with the remark that occasionally the endometritis did go on to a purulent salpingitis.

Tait and Sänger held much the same views, and the latter in an open letter to Tait stated that “salpingitis septica, co-existing with severe puerperal septicæmia, has never as yet given the surgeon an opportunity to remove the principal focus of disease by extirpation of the tubes. It is possible, however, that under certain circumstances such a procedure might be indicated.”

Even before these words of Sänger's were in print I had found the opportunity in the case of my patient just quoted and had taken advantage of it. The case was reported in full to the Philadelphia County Medical Society, June 22, 1887, and is the first on record of which I have knowledge.

The report of the case opened up a wide field, and within a year a number of such operations were recorded. The subsequent work and investigation in this direction have brought us to the present practice, which may, I think, be stated dogmatically: *Whenever an ovary or Fallopian tube is found distended with pus in the puerperal woman the offending organ should be removed at once by abdominal section.*

In making this statement I am giving careful consideration to catheterization of the Fallopian tubes, curettement and gauze packing of the uterus, vaginal or rectal incision and drainage, and all other so-called methods of conservatism. Even when there is imminent danger of rupture into the rectum I prefer the section, as personally I consider a rectal opening a great disaster, and to be anticipated and prevented by prompt surgical aid.

It is useless for me to again go over the same ground so often

covered in this matter—suffice it to say that I base my practice in the matter on the theory that where there is pus, it *must* be evacuated, and that it is much safer in the largest proportion of cases to evacuate it at a point of election than to allow it to empty itself, with all the chances of immediate danger to life as well as remote consequences.

There is one other point I would wish to impress most emphatically in regard to the “waiting policy” on the supposition that the patient can be “built up and prepared for the operation.” In such cases this is rank nonsense. The patient is approaching the point where there is imminent danger to her life—the cause being the absorption of septic matter into the general system. If there is any drug or combination of drugs which will successfully combat the condition it is absolutely certain that surgery in these cases must end: but the physician who attempts to deceive himself that at the present time this millennium has been reached and acts on this supposition, will stand in the way of many of his patients' only chances for life.

So much for true pus cases; but another and larger class remain in which there is infection of the Fallopian tube, the ovary and possibly the peritonæum without any formation of pus but with more or less decided tubal and ovarian disease, with peritoneal and connective-tissue exudate, easily demonstrable by a local examination. Clinically such cases are met with every day in varying shades of intensity, and the question of treatment must be settled by two conditions: First, the general condition of the patient; second, the ability of the physician to determine whether or not suppuration has occurred.

In the diagnostic ability of the physician then rests the whole responsibility. It is impossible to be dogmatic on this subject, for the reason that there are so many exceptions which must be determined in the case of the individual patient and her peculiar conditions at the time. In general, however, it is safe to say that in an attack of puerperal salpingitis and pelvic peritonitis dependent thereupon, no pus being present, an immediate operation is not demanded. Further, in those cases in which it is doubtful whether or no pus be present, the general condition of the patient permitting, I should prefer to delay, watching my patient closely and if necessary perform a secondary operation later on.

A third class is found among those who suffer from puerperal fever without any local signs of intraperitoneal inflammation as demonstrated by enlarged, thickened appendages, and inflammatory exudates. In other words those patients who are suffering from sep-

ticæmia due to the absorption of septic material from the uterine cavity and who are in imminent danger of dying therefrom. This class of patients is not small and will be found to grow in importance surgically the more closely they are studied. Beyond question there are a certain number of these women who will inevitably die unless the source of the absorption is cut off: a certain proportion may be saved if operated upon in time.

The only proper procedure under these circumstances is removal of the uterus, by which means the absorption of sepsis is at once stopped and unless sufficient has already been absorbed to too greatly disorganize the blood the patient will easily survive.

In making this statement I am aware that I am treading upon comparatively new ground—ground which has not as yet been fully tilled but which is well under way in that direction. I am also fully aware of the fact that in advising such a radical step one is in danger of enticing many men into doing many unnecessary operations; but that I conceive is a matter for the conscience of each operator in each given case—one can only discuss these matters from their scientific standpoint. The stumbling block with which we are brought face to face in these cases is the ability of each one of us to determine which cases are suitable for operation—in other words which cases are likely to die from the septicæmia if nothing surgical is attempted. Further the amount of success to be attained will be directly dependent upon the period of the disease at which the operation is performed—like all other operations in acute diseases threatening life, the earlier the operation the more likely a successful result. It is evident that a wide range is left, and must necessarily be left, for individual judgment, based on the condition and symptoms of the patient and unless great care be exercised much unnecessary surgical interference may take place.

A discussion of the symptoms and diagnosis does not come in the province of this part of the subject.

My own belief in the matter is that hysterectomy for this class of patients is of limited necessity, excepting in cases seen in consultation. In other words I believe that in the vast majority of septic cases seen in time, dangerous complications can be avoided by thorough curettement, irrigation and antiseptic packing. In consultation however for obvious reasons we are bound to see cases in which even this procedure, repeated, will not lead to good results. These are the cases in which hysterectomy must be considered.

A sufficient number of such operations have been performed to

demonstrate its entire feasibility. By members of our own Society four successful cases at least have been achieved. Howard Kelly removed a septic uterus from a dying woman five days after infection and saved her life. Barton Hirst removed a septic uterus one month after confinement with a successful issue and has recently removed another one ten days after infection with an equally favorable issue. E. P. Davis removed a suppurating uterus two weeks after infection with similar results.

I know of several unrecorded cases of fatal issue but in each case I am convinced the operation was postponed too long.

To conclude, and speaking dogmatically. Patients suffering from puerperal septicæmia with pus in the appendages should be submitted to an abdominal section. If the pus be contained in one Fallopian tube or ovary, only that organ should be removed. Should it become necessary to remove both appendages, the general condition of the patient permitting, the uterus should be removed at the same time.

It is well in patients suffering with puerperal septicæmia in whose case suppuration has not taken place and in doubtful cases, not to operate, the general condition of the patient offering no contra-indication, but to await and allow the subsequent course of the symptoms decide as to the proper treatment.

Patients suffering from puerperal septicæmia due to absorption of septic matter from the cavity of the uterus whose lives are seriously threatened will in carefully selected cases demand early hysterectomy.

Since writing this paper a multipara who had had a miscarriage a week ago came into my hands for treatment. Since her miscarriage (at the second month) she has been suffering from chills and fever with tender and swollen abdomen. A vaginal examination disclosed a large soft uterus, bleeding, with a purulent discharge from its cavity; the appendages were enlarged, fixed and boggy. This morning I opened her abdomen and removed both ovaries, Fallopian tubes and uterus. The tubes contained pus, the uterus was large soft and friable, the ovaries large, soft and apparently about to break down. There was an abscess in the pelvis at the junction of the fimbriated end of the left Fallopian tube the ovary and the lower part of the pelvic wall. She left the operating table in good condition. I will report the result at another meeting; at present I see no reason why she should not recover.

This makes the fifth case reported by members of this Society: Hirst, 2. Kelly, 1. Davis, 1. Baldy, 1.

PUERPERAL INFECTION OF THE URINARY TRACT AND OF THE RECTUM.*

BY RICHARD C. NORRIS, M. D.

Obstetrician in charge of Preston Retreat, etc., Philadelphia.

The topic assigned me in the discussion of sepsis following labor is not so important as infection of the parturient tract since the urinary organs and the rectum are not so frequently involved in septic processes.

The literature of this subject, however, is sufficient to convince one that infection of the urinary tract is not only not uncommon but may, indeed, be a very disastrous complication of the puerperium. Thus Schwarz noted, in 1,100 carefully observed puerperæ, catarrh of the bladder in 2.9 per cent. of the cases. The records of severe types of cystitis in childbed show a mortality of 38.8 per cent. Add to this the results of infection spreading along the ureters to the kidneys with consequent pyelitis, pyelo-nephrosis or nephritis and the sum of possible injury is well worth close attention by every one practicing obstetrics.

It will be convenient to classify infection of the urinary tract as (1) *ascending* infection *i. e.* from the bladder or adjacent structures along the ureters to the kidneys; (2) *descending* infection—in which the kidneys are primarily, the bladder secondarily involved. Of these the former is more important because less generally recognized as a possible and dangerous puerperal complication.

Ascending infection usually begins in the bladder, the infecting poison gaining access to this viscus in one of several ways. Commonly the catheter carries the infecting agent into the bladder, either being itself not chemically clean, or if properly sterilized, but improperly introduced, it may become contaminated by decomposing lochia, at the time of its introduction into the bladder. These dangers of the catheter can be avoided but there remains one other danger which, unfortunately, it is difficult to escape, namely, the danger of introducing into the bladder micro-organisms which are commonly found in the otherwise normal urethra. Gawronsky † examined 62 women with no symptoms of urethral or cystic disease and

* Read before the Philadelphia Obstetrical Society, December 6, 1894.

† *Münchener med. Wochenschrift*, March 13, 1894, p. 204.

found pathogenic bacteria in the urethra in 24 per cent. of those examined. Of 10 women examined by Rovsing, bacteria were found in the urethra in six cases. Further, Rovsing* records 29 cases of cystitis, in all of which the urine contained pathogenic bacteria and as 20 of these cases followed catheterization with a clean catheter, he concludes that the cystitis was caused by the urethral microbes carried into the bladder by the catheter. Hofmeister concludes from his investigations that it is not decided whether the bladder in health contains pathogenic micro organisms, but that the urethra is certainly rich in them. From these facts but one conclusion can be drawn, viz. : that the catheter at best is a dangerous instrument. That cystitis does not more frequently follow its use is doubtless due to the fact, pointed out by Bumm, Dubelt, Rovsing and others, that a healthy, uninjured bladder can resist the action of micro-organisms when introduced.

In the puerperium, however, this resisting power of the bladder is commonly not present on account of the pressure and contusion the bladder receives during labor. The experiments of Rovsing and those of Guyon are therefore of great interest and value to the obstetrician. They found that by ligating the urethra and thus causing overdistention and injury of the bladder, a catarrhal cystitis was produced but when micro-organisms were subsequently introduced the cystitis rapidly became suppurative. These facts, then, explain why the use of the catheter is especially dangerous in puerperæ.

Ascending infection of the urinary tract may rarely occur independent of the use of the catheter. Kaltenbach first called attention to the frequency of pyelitis following labor and pointed out its connection with inflammatory processes about the uterus. Stadfeldt has also demonstrated the same affection following distention of the ureter and pelvis of the kidney, the ureter being occluded by pressure of the puerperal uterus.

Recent clinical and experimental studies of cystitis, particularly by Dogen, Clado, Hallé, Albarran, Rovsing, Morelle, Denys, Schnitzler and Krogius apparently prove that micro-organisms located in any of the pelvic viscera may find their way into and infect the bladder. Reymond's† observations are especially interesting. In two cases of cystitis where the micro-organisms in the uterus and bladder were identical, treatment of the bladder was without result but after curet-

* *Cystitis—its Ætiology, Pathology and Treatment*, Berlin, 1890.

† *Annales des maladies des organ. genito-urinaires*, April, 1893.

ting and disinfecting the uterus the cystitis rapidly disappeared. In seven other cases a cure of the cystitis followed removal of the diseased pelvic organs. His four experiments upon animals showed that the introduction of organisms into the pelvis outside the bladder walls gave rise to cystitis with the micro-organisms in the bladder and not in the blood current of the pelvis. In Wreden's* experiments intestinal micro-organisms or those intentionally placed in the bowel were found in the bladder. All of these observations are of value to obstetrics as an added argument for the necessity of surrounding the patient with strict cleanliness and antisepsis for they show that sepsis of the parturient tract can and does sometimes spread to the urinary organs.

Having thus briefly indicated how the bladder and ureters may become infected during the lying-in period it is easy to understand that by continuity of structure the kidneys finally are involved in the septic inflammation. Every obstetrician of wide experience will now and then see pyelitis, pyelo-nephrosis or nephritis follow infection of the bladder and ureters.

The time required for the spread of the inflammation from the bladder or adjacent structures, along the ureters to the kidneys varies. The usual time is about ten days or two weeks after the appearance of cystitis. It can, however, in rare cases occur almost from the outset, before or coincident with marked bladder symptoms and in some cases the kidneys become infected only after a long-standing and persistent cystitis or ureteritis. I have elsewhere† referred to seven cases of infected kidneys following labor and wish now to briefly report a case of ureteritis and pyelitis, at present under my care, which I believe to be the result of an infected ureter following childbirth without preceding implication of the bladder. The patient, Mrs. C., had been treated for several months for what seemed to be repeated attacks of nephritic colic. There had been frequent micturition and pain in the lumbar region since the birth of her first child four years ago. The attacks of nephritic colic first appeared when she had advanced to the sixth month of her second and last pregnancy and they increased in frequency and severity after she had been delivered. There was a history of mild infection after each of her two unassisted labors. Upon examination the right ureter was enlarged, exceedingly tender and readily palpated from its vesical

* *Centralblat. f. Chirurgie*, No. 27, 1893.

† *Transactions of the American Gynecological Society*, 1893.

orifice along the base of the bladder and upward as far as the finger could reach. The right tube and ovary were enlarged, tender and adherent. There was a tumor with distinct fluctuation in the region of the right kidney. The urine contained pus, a small amount of albumin but no casts. A perinephritic abscess was opened and drained. There was no stone, and the kidney was apparently normal. After five weeks the urinary fistula in the loin refusing to close a No. 7 catheter was passed through the opening in the loin down the ureter to its pelvic portion but would not pass further. Vaginal examination found that the tenderness and thickening of the pelvic portion of the ureter had not disappeared and obstruction was believed to have occurred at this point, from inflammatory deposit. A ureteral bougie was passed through the opening in the loin, down the ureter into the bladder and allowed to remain three days. The bougie was thereafter passed every third day, and the ureter daily injected with boric-acid solution. After two weeks of this treatment the tenderness and thickening of the ureter has almost disappeared and within a week or two the drainage-tube will be removed with the expectation of cure by spontaneous closure of the opening in the loin.

That this case is not one of tubercular origin is apparent from the disappearance of all purulent discharge and inflammatory deposit as well as from the negative result of analysis of the urine for tubercle bacilli. Cases analogous to this, reported by Skene* and by Mann† have been attributed by the n, to simple pressure of the child's head or of forceps during delivery, but it seems more rational, in the light of the experiments above referred to, to consider infection subsequent to traumatism more important than traumatism alone.

It now remains to briefly discuss the descending form of infection of the urinary tract, *i. e.*, infection attacking the urinary organs primarily in the kidneys. This is most commonly found when there is general sepsis, metastatic abscesses occurring in the kidneys as in other organs. There are, however, cases recorded which would seem to prove that the kidneys of the puerpera, in their effort to eliminate toxic agents from the body, become infected and finally give evidence of suppurative or less marked inflammatory change such as catarrhal nephritis. The observations of Cornil, Bourget, and Griffiths‡ make

* *Transactions of the American Gynecological Society*, 1890.

† *Ibid.*, 1894.

‡ Quoted by Vinay, *Traité des Maladies de la Grossesse et des suites des Couches*, Paris, 1894.

it probable that these inflammatory changes result from the passage through the kidneys not only of micro-organisms themselves but also of their pathogenic products, the toxins acting upon the kidneys practically as mineral poisons.

Diagnosis.—The early symptoms of septic puerperal cystitis are those of cystitis under other circumstances. In very severe cases exfoliation of the mucous membrane or even of the muscle walls of the bladder may occur and occasion severe tenesmus or retention of urine. The temperature curve will often be of value as a means to determine when the septic inflammation invades the ureters and kidneys. The fever accompanying the inflammation of the bladder is usually moderate and gradually disappears after three to six days. Should this gradual defervescence be followed, for ten days or two weeks, by an almost afebrile curve, and this by a prompt secondary rise, rapidly reaching a much greater height than had previously existed and accompanied by pain and tenderness over the kidney, the diagnosis of secondary or ascending infection of the kidneys may be assumed. Should the fever curve rise to a great height—above 103° —at the very beginning rapid infection of the kidneys has likely occurred.

Microscopical examination of the urine also offers diagnostic signs of the extent of the inflammation, by the presence of large amounts of albumin, renal epithelium and casts. In very rare cases bacteriological examination of the urine will be necessary to determine infection of the urinary tract since it is possible to have infection without the appearance of purulent urine and without marked bladder symptoms. This is a fact to be borne in mind when those rare cases of puerperal sepsis with continued fever, rapid pulse, and extreme prostration, can not be accounted for by demonstrable local signs of sepsis along the parturient canal. It is also desirable to make repeated examinations of the urine in all cases of puerperal sepsis since it is possible for the kidneys to be coincidentally involved, with either ascending or descending infection. The damage thus done to the kidneys may be very insidious and explains some of the cases of eclampsia, occurring, as late as the fourteenth or eighteenth day of the puerperium, in patients with previously healthy kidneys. Siredey has reported such a case.

Prognosis.—The prognosis of septic cystitis, fortunately, is favorable, provided proper treatment is begun early. Neglected cases, with ulceration and exfoliation of the bladder wall have a mortality of thirty-eight per cent., and of those who recover, the bladder, ureters and kidneys are usually permanently damaged. Pyelitis or pyelonephrosis is a common sequel, and chronic nephritis has thus origi-

nated. Mayer has recorded some cases ultimately dying from the kidney lesion long after their labors.

Treatment.—The most important part of the treatment of infection of the urinary tract after labor is its prevention. In view of the danger of introducing germs into a bladder, more or less wounded, and therefore less resistant to the action of micro-organisms, the use of the catheter after labor should be delayed as long as safety will permit and other means should be employed to secure urination. Often this will be accomplished by repeatedly placing under the patient the bedpan, filled with hot water; by the sound of running water; by assisting the patient into an upright position on her knees; by pressure over the lower portion of the abdomen, etc. While avoiding the catheter, however, the danger of overdistention of the bladder must not be forgotten, since this renders the organ more vulnerable to infecting agents. As a rule, after twelve hours, if the bladder has not been spontaneously evacuated a chemically clean glass or soft-rubber catheter should be passed visually, having first cleansed the meatus thoroughly with a pledget of cotton and an antiseptic solution. To make assurance doubly sure it would be well, although often impracticable, to irrigate the urethra before passing the catheter into the bladder. When cystitis develops, in spite of prophylaxis, irrigation of the bladder should be carefully employed, at intervals of four hours, with mild antiseptic solutions—creolin one half of 1 per cent. or boric acid gr. xv to the ounce. Irrigation, warm applications over the bladder and diluent drinks will usually check the disorder in a few days. When the symptoms continue and the patient becomes septic, the free use of stimulants is necessary, frequent irrigation of the bladder being meanwhile continued. When constant dribbling from the bladder is replaced by retention of urine, occlusion of the urethra by an exfoliated portion of the bladder-wall should be suspected and the separated portion should be removed, dilating the urethra for this purpose, if necessary. Before the kidneys are involved in the septic process, the administration of salol will be useful. After the kidneys were invaded in one of my cases, the daily administration of thirty grains of salol was followed by the appearance of blood in the urine so promptly that it had to be discontinued. Large doses of iron, inhalations of oxygen, and the free use of stimulants comprise the general treatment on which most reliance can be placed.

Infection of the rectum is very rare, as a primary condition; a few cases have been recorded, occurring in hospital practice, from the use of an infected syringe nozzle. Rectal infection accompany-

ing infection of the parturient canal is not infrequently seen. Two years ago my friend Dr. Stahl consulted me about a case of sepsis following a miscarriage. The patient first developed infection of the vagina and endometrium, was douched, catheterized and was given rectal injections with the same syringe used for the vaginal douches. She developed besides the septic endometritis and metritis, a virulent septic cystitis and septic proctitis. Pus and mucous casts of the bowel were discharged from the rectum. In spite of septic endocarditis, albuminuria and convulsions, the patient finally recovered, but with a crippled heart and with damaged kidneys.

A CASE OF CARCINOMA OF THE PARTURIENT UTERUS,
REMOVED THREE DAYS AFTER CONFINEMENT.
RECOVERY.*

BY GEORGE H. NOBLE, M. D., ATLANTA, GA.

This specimen is one of carcinoma of the parturient uterus, removed by vaginal hysterectomy three days after labor. This woman had previously been confined sustaining a laceration of the cervix uteri, which perhaps was a factor in the cause of the disease. In the first few months of the last pregnancy she was treated locally by her family physician; but there was nothing I am told to cause a suspicion of malignancy. The treatment was suspended when quickening became perceptible, but it was soon followed by offensive watery discharges admixed with pus and blood.

Dr. W. B. Parks, who was attending her at this time, recognized the character of the case and asked me to see her on the 4th day of last June. He stated that she had been in labor for some time before he saw her, altogether a little more than twenty-four hours. She was very much exhausted; pulse 135 per minute, very weak and compressible, with marked anæmia; the temperature 102°. The history gave a clear evidence of repeated chills or rigors with varying temperature and excessive diaphoresis for three months past, and in that time she was markedly reduced in flesh and strength.

Almost the entire vaginal portion of the cervix was destroyed, less than one fourth of its circumference remaining intact. The in-

* Read before the Southern Surgical and Gynæcological Association, November 14, 1894, at Charleston, S. C.

duration extended deep into the uterine tissue but could not be felt beyond the limits of that organ. The roughened ulcerated surface was easily traced for a considerable distance within the cervix, the os being dilated to about five centimetres in diameter. Her condition was unpromising and surgical interference was clearly interdicted, so the os and vagina were cleansed thoroughly and lightly dressed with gauze. She was then placed profoundly under the influence of morphia sulphate, with a view of arresting labor, securing rest and recuperation sufficient to permit evacuation of the uterus, which occurred spontaneously twelve hours later. The child was poorly nourished and lived only a few weeks, finally dying of inanition. A slight laceration occurred in the delivery, the rent taking place in the un-ulcerated portion of the cervix, but not implicating the vagina. The surface was daily curetted and dressed antiseptically up to the time of the operation, a noticeable effect of which was the decrease in temperature, the elevation not going over 0.5° .

The operation was deferred a few days for the purpose of securing some reaction in the patient that she might be enabled to undergo the ordeal and to effect through the process of involution some reduction in the size of the uterus. For three days after delivery the pulse ranged from 100 to 120 per minute, quite weak, but slightly improved in volume, with temperature a little more than normal (99° to 99.5°). Her condition was not encouraging even under vigorous stimulation by the mouth and by hypodermic use of digitaline, strychnine, atropine, etc. The ulceration was so deep at one point that it nearly penetrated the cervical walls, and as she had been so profoundly impressed by septic absorption it was thought best to avoid further delay in operating, lest the rapid extension of the disease and sepsis should put her beyond surgical relief. After careful antiseptic preparation the uterus was packed with gauze, the ragged edges of the cervix trimmed away, the os rolled in upon itself and closed. The successive steps of the operation then followed :

The greatly dilated vessels attending the gravid state had not been sufficiently reduced in size to relieve the increased dangers of hæmorrhage, consequently compression forceps were in demand at each step or turn in the operation. An attempt was made to tie off the broad ligaments, but the parts were so swelled and puffy that it was found impracticable after the lower section was ligated. The uterus was so large that it well filled the pelvis so that no room was left to manipulate the ligatures, only space enough for two fingers being available, consequently clamps were employed to complete the work. Morcel-

lation or segmentation was rejected in this case, the extremely anæmic condition of the patient forbidding any unnecessary loss of blood.

On the left side two, and upon the right three clamps were placed above the ligatures and about a dozen artery forceps were used in other parts of the wound, as time would not allow ligation of bleeding points. Separation of the bladder attachments was tedious on account of the extended surface rendering the peritoneal fold rather difficult of access. Douglas' pouch was thickened by old adhesions, the point of penetration being at least three and a half centimetres thick. There was also a very dense adhesion of the descending colon to the posterior uterine surface, about seven centimetres in diameter.

The peritonæum and mucous membrane over the bladder was approximated by compression forceps and the wound drained with gauze. She bore the operation well up to the time of cutting the uterus away, when it became necessary to readjust the clamp upon the right uterine artery as there was a small amount of uterine tissue in the stump and in order to remove it the clamp required setting back to the ureter. There was no excessive hæmorrhage, but what blood did escape was more than she could well spare; for a time the radial pulse was imperceptible after returning her to the bed. I directed the infusion of the normal salt solution which was skillfully administered by my associate, Dr. Taliaferro, with the happiest results.

The clamps were removed in forty-eight hours, excepting the one upon the right uterine artery. In endeavoring to disengage the instrument free hæmorrhage occurred; it was instantly closed and left for twelve hours more when it was successfully taken away.

There was no evidence of sepsis, but the heart's action was weak requiring hypodermic stimulation for four or five days. The stumps sloughed off and the wound closed by granulation, except at a point on the left side where a very small ureteral fistula occurred, which closed spontaneously in eight weeks. The woman made a satisfactory recovery and visited Virginia in twelve weeks.

The questions naturally arise: What is the advantage of hysterectomy over Porro's operation, and if hysterectomy is preferable should the vaginal or abdominal method be given precedence over the other? To the first I would answer that hysterectomy undoubtedly promises more to the mother than Porro's operation in cases where the disease is confined to the uterus, and I assert that when the cancerous mass can be successfully removed, it is the duty of the surgeon to do it, as Porro's method merely bridges the woman over the puerperal state and leaves her to her fate. In radical removal there is a promise of

cure. In answer to the second question, it is evident that the method of operating must depend largely upon the character of each individual case; thus the vaginal operation may be done when it is desirable to take advantage of the diminished liability to shock, even though the large size of the uterus may render the operation more tedious. Removal by segmentation or morcellation will greatly expedite the work in such instances, but it entails the loss of more blood, that can ill be spared by women worn down by rapidly extending malignant disease, which is always the case in cancer of the gravid uterus. And it exposes the peritonæum to infection from the uterine cavity, which may not be perfectly sterilized even in the hands of very cautious persons.

In hysterectomy by the abdominal method in Trendelenburg's position it is claimed (Wyley, Polk and others) that the advantage of rapidity in work and the ability to remove more thoroughly the diseased portions, even where the vagina is involved, is of inestimable value, but there is greater danger of shock. If the disease involves the vagina to such an extent that the foetus can not be delivered *per vias naturales*, hysterectomy is out of the question and the case falls to the last resort, the Porro operation, with the hope of saving the life of the child and diminishing the risk of sepsis in the mother.

The mortality in Porro's operation is according to Harris (*New York Journal of Gynecology and Obstetrics*, vol. iii, No. 4, p. 273) from eight to twelve per cent. under the most favorable circumstances and in the hands of experienced operators. In vaginal hysterectomy for bilateral disease, according to Jacobs (*Mod. Med.*, vol. iii, No. 6, p. 143)* it has in 690 cases been reduced to 4.49 per cent., and in 184 of his individual cases to 2.7 per cent., thus showing a much less mortality under ordinary circumstances in favor of the latter operation.

In the face of this showing it is yet a question whether the abdominal method with its advantages and disadvantages should be given preference over the vaginal operation, which is attended with less shock. Wyley says: "Though the mortality from vaginal hysterectomy is very small, complete removal by coeliotomy is, I believe, the operation of the future, as more of the diseased tissue in the broad ligaments and vagina can be removed than by vaginal hysterectomy."

However, it is not my purpose to point out the advantage of one operation over the other, but to show the feasibility of hysterectomy in the puerperal state for cancer of the uterus, as this case clearly demonstrates, even though it is too early in this instance to claim immunity from return of the disease.

* Also *American Journal of Obstetrics*, Nov., 1894, vol. xxx, p. 648.

THE ELEMENT OF CAUSATION IN ABDOMINAL CONTUSIONS.*

BY THOMAS H. MANLEY, M. D., NEW YORK.

There exists a considerable discrepancy of opinion on the question of causation in abdominal bruises ; or perhaps, it might be more correct to say, on the precise manner in which disorganization, succeeds the application of force. In order to elucidate this subject several observations have been made, on the bodies of those who have succumbed to traumatisms ; and on those who have sustained injury, but have survived, the latter, presenting such a series of symptoms of local disorder and structural disorganization, as in a certain degree at least indicated the physical influences, brought into operation. An effort has been made too, by experimentation in the living dog, to throw further light on the subject ; by subjecting him to various degrees of violence, and then, after varying intervals, to kill him, and in dissection, note the succeeding pathological changes.

With this purpose in view, Dr. B. F. Curtis has conducted an extensive series of interesting experiments on forty-four dogs, supplemented by others in six cadavers (*American Journal of the Medical Sciences*, October, 1887). The abdomens were traumatized, by allowing pieces of wood and masses of iron to fall on them. M. Giornadi in the spring of 1879, in Genoa instituted a very extensive series of experiments in the lower-animal, with a similar view. He applied nearly, every conceivable description of force, the animals being in various conditions, and placed in various attitudes. His observations were conducted with rare skill and his conclusions are highly interesting. He left little undone, as far as experimentation went. (*Effets des coups-violents sur l'abdomen. Gaz. des hôpitaux*, Mai, 1879.)

Experimentation on the lower-animal, undoubtedly is not without value, in the domain, of surgery ; but, to accept the deductions from it alone, and apply them to the human-being without reservation is a great mistake, and calculated to work much evil. In this particular class of cases, the analogy or comparison is not close ; and, conclusions reached will accordingly have, but, a very limited range of application, when extended to practical surgery.

* Read at the annual meeting of the New York State Medical Association, October 12, 1894.

The greater number of contusions, or bruises on the abdomen, which we encounter on the human subject, it is quite impossible to induce at all, on the lower-animal; *e.g.*, as falls from great heights, machinery, railroad, accidents, runover-injuries and the like. The law, public sentiment and humane feelings alike demand, that the animal must be anæsthetized; whereby he is unable to avail himself of those auxiliary safeguards, with which he is provided, in the event of sudden accident. The muscles are relaxed and the relation of the organs are in consequence materially altered. Besides, all this, there is little or no analogy in structural composition and arrangement. The quadruped moves in a horizontal position of the body, while the attitude of man, is perpendicular. The entrails of the dog are very thick and tough, and tolerate in a most remarkable degree any description of manipulation regardless of prophylaxis against sepsis. His recuperative powers after trauma are marvelous. His intestine may be removed by the foot or yard, the ends sewed together, and he will scarcely miss a meal, so slight is the constitutional disturbance. His peritonæum, which is nearly as tolerant of handling as his integument, is quite immune against trauma. But, with man, he receives the main impact of force, in full consciousness, and, though his peritoneal cavity is the most exposed to percussive incruising force, it oftener escapes. Nature has made such provisions for its protection, through sudden changes of attitude muscular contraction and the defenses provided by the extremities that serious damage of it, is much less frequent, than of the apparently better protected cranial or thoracic cavities. In a *second's warning*, the muscular girth of the belly sends the floating viscera up, behind the shelving vault of the lower thorax, the chest is inclined and the knees drawn up. Indeed, as a matter of fact, serious nonpenetrating injuries are seldom seen, except, when the body is suddenly caught and fixed, or, one is hit, when off his guard.

The human intestine is very thin and fragile as compared with the dog and its serous-membrane is so exquisitely sensitive and intolerant, that it never can be exposed without danger to life. It is therefore, evident, that in order to pursue an intelligent and practical study of this class of lesions, our observations must be made, rather in the wards of a hospital and the autopsy room, than in a laboratory.

Mortal Concussion of the Abdomen by Blows over the Epigastrium.

A few cases are on record, of instant death following blows over the epigastrium. Ashhurst declared it, as his opinion "that death may follow a severe blow over the abdomen." (*Ashhurst's Surgery*, p.

391.) Mr. Thomas Bryant is unequivocal on this point, and says, that "under certain circumstances, a trifling blow may give rise to alarming symptoms." (Bryant's *System of Surgery* p. 217.) Agnew was reserved on this question. Pirrie believed, that blows over the stomach or duodenum were more dangerous than, on other parts of the abdomen. (*Principles of Surgery*, p. 595.) Le Gros Clark said, "that if the doctrine be true, that a blow over the abdomen may cause death it must be a very rare accident." (*Encyclopædia of Surgery*, p. 988.) Holmes practically repudiated the doctrine. Guthrie believed, that violent blows over the abdomen might lead to ultimate absorption of muscle and gradual relaxation, favoring hernia. (Guthrie, *Surg. Obs.*, p. 312.) Gaut adds his testimony to the probability of blows over the abdomen producing fatal results. (*Science and Principles of Surgery*, vol. i, p. 532.) With a view of determining as fully as possible the recent views of surgeons on abdominal contusions, the current, home and foreign literature, issued, in the past fifteen years was examined, since the time, that laparotomy became a recognized surgical procedure. One of the most conspicuous features of the search, was the comparative scarcity of abdominal contusions, chronicled, during that period; which would imply, that this subject has not received the attention which its importance merits. During that period, I could find no case on record, of sudden death, from a blow over the abdomen, without well-marked pathological alterations succeeding. Modern observation and experimentation all tend to discount and repudiate the assumption that death is commonly possible by a blow anywhere over the abdominal walls, in one of sound health; without structural lesion following. Mortal concussion of the brain and spine are to-day denied by some of our noted authors, and probably, mortal concussion of the abdomen, without central pathological changes has little more to support and perpetuate it, than the parrot-like practice, in vogue, in the past, of servilely quoting from one work to another, notions and opinions which were wanting the stamp of personal observation and had nothing to support them, except their hoary antiquity. Sudden, concentrated violence applied to the abdomen, undoubtedly may cause almost instant death; but, not with the frequency, heretofore supposed. But, cases of sudden death, are on record, from blows over the cranium, the neck or the thorax. A person is suddenly hit over the abdomen, in a full inspiration, when the lower lobe of the left lung has descended, behind the diaphragm; he gasps for a moment, shock is communicated through the reflexes to the respiratory centers, and for an instant he is unable to breathe.

A similar degree of violence applied over the trachea, the thorax or face, may produce a somewhat similar train of symptoms. The proximity of the solar plexus the præcordia and intimate relations of the terminal filaments of the pneumogastric and sympathetic ganglia, have been supposed to render the epigastric region more susceptible to injury, than others. There are however, but very few well-authenticated cases on record, of immediate death from blows over the abdomen. We never see them occur, as a result of crushes. Some authorities deny that a blow can produce death, unless, the individual is suffering from organic disease, is greatly exhausted or fatigued; as a prize-fighter, toward the close of the contest. No surgeon has ever been an eye-witness to such an accident; therefore it is probable, that those cases on record, were complicated by concomitant pathological conditions; and with them the blow over the stomach is only the fatal climax. Probably, in most instances, the patient in the midst of great excitement, when struck, psychic influences play a dominant part, in paralyzing the heart's action.

Causation, in Cases of Laceration of Rupture of the Abdominal Viscera Succeeding Percussive or Crushing Violence.

The abdominal viscera, in the performance of their functions, do so, in obedience to physical and vital laws, in connection with pneumatics, hydraulics and motion. The integrity of the viscera is preserved, by the harmonious action of these natural forces. A practical knowledge of these, is quite indispensable, for an intelligent comprehension of the mechanical element, in all instances of serious, non-penetrating abdominal injuries. It goes without saying, that a familiarity with the structural anatomy and pathological laws, in operation, here, after injury, is presupposed. In the present instance attention will be chiefly directed to the mechanics of the subject, as an element in ætiology.

For our present purpose, we may regard the abdomen, as a sac, with two openings; one above and one below. Within it are the solid organs, a tubular structure, containing gases, fluids and solids, besides, the great blood trunks and other accessory structures. Its contents are tethered to the spinal-column and diaphragm; and, are in incessant motion. Its vulnerable areas, are, the anterior, lateral and posterior. The latter is fixed solid and resistant, so that violence, when coming through the lumbar, must, first, spend its energy on the spine.

As a general rule, in abdominal bruises the force comes from before.

This force is of two qualities.

1st. Percussive or contusive ; and, secondly, crushing.

In the majority of cases, the viscera are disorganized by being directly crushed against the bodies of the spinal-column. In the minority, trauma is probably sustained, through percussive force, as by blows kicks or falls. The intestine being a suspended, floating body, when sudden and violent force is applied, it is contused or rent, in proportion to the momentum and volume of force sustained. Nevertheless, abdominal viscera seldom sustain serious harm from blows ; except when they are directed with great energy ; as the kick of a horse ; when the parts are crushed, as well as contused ; and laceration follows, not through the impetus of impact but, through the viscera being directly compressed against the spine or pelvic brim. This is, because, the abdominal walls offer great resistance and the velocity of impact is not ample to disrupture, the mobile, elastic bowel, except, in unusual cases.

A young man came under my care a year ago, who illustrated the *modus operandi* of contusive force on the abdomen. He was running a circular saw, when the board in his hand was suddenly splintered, a large fragment hitting him with great force, over the umbilical region. He died three days later, when an extensive rupture of the jejunum was discovered.

Another case which typifies the same class came under my care, in July, of this year. A large, heavy man was violently kicked, by a young colt, over the abdomen. Collapse promptly set in and he died within six hours ; probably, from internal hæmorrhage. An autopsy was denied. A swimmer, as he plunges into the water, does so, head first ; as he knows from experience, severe shock is likely to be produced, by striking flat on the abdomen.

On the whole, concussive trauma of the abdomen, is more common than compressive, though with few exceptions, the consequences are more trivial.

2ndly. *Crushing Injuries* of the abdomen are always the most severe and yield the largest mortality. One is crushed by some falling body, by the wheels of a vehicle passing over the trunk ; or by being jammed between two resisting bodies. The mobile abdominal walls anteriorly retract away from the advancing force, until they are arrested, by the vertebral barrier behind. The organs are caught between the opposing surfaces within, and traumatized, in various degrees. In some, in consequence of moderate force the extent of contusion is slight, with no marked constitutional disturbances, while with others,

when ponderous bodies have passed over the abdomen, or the extent of compression has been great, a solid organ may be reduced to a pulp, terribly lacerated or contused. The hollow organs, as the intestine and canals suffer variously; from a slight abrasion of its mucous or serous coat, to a complete cleavage through its lumen.

The precise manner, in which various types of visceral injury follows the application of violence over the belly's surface, is not by any means clear. How, indeed, in one case the common, bile duct suffers perforation from pressure, when the muscular-girth, through which that force must be transmitted, the overlying, fragile intestine and the adjacent friable liver, all escape, is quite beyond our comprehension or knowledge.

I have elsewhere, reported a remarkable case, of rupture of the receptaculum chyli—all the other organs (*Medical News*) escaping serious damage. The mesenteric vessels may be opened, the ureter lacerated or nerve-trunks torn in two; and yet the circumjacent viscera escape. And, it certainly is a most remarkable phenomena that deeply lodged organs may bear serious mutilation, and yet, the overlying integuments, are not only, unbroken but not even a mark of discoloration may remain, to mark the site of impact. In no single instance in twenty-five cases of serious abdominal crushes witnessed by myself was there such visible discoloration of the abdominal integument, as in any definite manner, pointed to the probable extent of intramural injury. Perforation of the bowel or damage to the vascular apparatus is produced by, and succeeds, as a result of, the action of such force, as produces various traumatic lesions, elsewhere; and is of two varieties.

1st. *When violence immediately* disorganizes, without the action of secondary pathological changes; as when the intestine is immediately ruptured, a vessel is torn open, or an organ lacerated. In this class, the organ is generally crushed against the spinal bodies, which, in the lumbar-region are powerful and quite immovable. The action brought into operation, is quite the same, as we witness in the chopping of wood. We may regard the descending axe as the vertical plummet, and the rachidian buttress as the block.

Now, if the axe falls with reduced force the stick is merely indented: or if it falls flatwise, it leaves little or no impression.

In ruptures, however force may be applied, its action must be concentrated and over a very limited area. Possibly, tension may play a subsidiary part; but can be little more for, in lacerating the peritonæum the sero-cellular membrane which anchors the intestinal

coils to the spinal-column, is an elastic and fragile structure, which is easily torn off, on moderate force.

2ndly. *Consecutive pathological changes* are what chiefly lead to serious organic changes, in those cases of complicated abdominal-injuries.

An organ may be so contused and lacerated, that a considerable area of it is devitalized. A cessation of function in the involved part follows, atrophic changes, wasting or resorption of its cellular elements, ulceration, gangrene or suppuration follows. A hollow viscus or large blood-trunk has borne the brunt of injury. We know, from experimentation, that when an intestine or a large artery is severely contused, its inner and middle coats give way first. With an artery a coagulum at once forms at the seat of injury and there remaining until, the processes of repair are complete, and the circulation will suffer probably, but little or any, as it is maintained, by the collateral branches; but unhappily for the injured intestine there are no communicating branches, to divert the alimentary-current when a local injury is borne by its inclosing walls. Yet, the economy makes provision for this emergency. Function in the whole intestinal tube is immediately arrested. It is placed at once in a quiescent state, and the remarkable plastic property of the peritonæum is called into prompt action, to seal up the impending breach, through adhesive inflammation.

When a main-blood-trunk, like abdominal-aorta is damaged the extremities are threatened. Denonvillier (*Mémoires de chirurgie*, vol. xii, p. 419) has recorded the case of a boy run over by a heavy vehicle. The abdominal symptoms were severe for a few days; and then showed signs of amelioration, when gangrene appeared on both lower-extremities. After death the intima and muscularis were discovered, widely lacerated just above the bifurcation; the lumen was firmly plugged, by a large, partly organized clot. One can understand how the femorals are exposed to crushing force, from below, where they pass over the sharp ridges of the pubes; and, the aorta, where it rises from the left to right, to mount the body of the fourth lumbar vertebra. In spite of the provisions of Nature, perforation of the intestine may follow, at a late date after; when we feel quite assured that all danger is past. In three cases within the past year, coming under my observation, it suddenly set in, just at a time, when the patients wanted to get up, and when all severe constitutional disturbances were past; in one on the fourth day; in another on the eighth day and another at the end of the third week.

Traumatic peritonitis as a consecutive phenomenon, to non-penetrating injuries of the abdomen is caused, chiefly, in three ways:

1st. The first and most common, is through the direct effects of the injury itself, by contusion; in precisely the same manner as trauma of other serous membrane, which line the great cavities and joints. The peritonæum has been bruised or stretched; its nerves have been over-strained or lacerated and there probably has been such an injury to its vascular branches, as leads to congestion or a sanguineous effusion into its subserous stroma of cellular tissue. We may be warned of its advent by the decubitus of the patients, the paretic intestine and hard, sensitive, abdominal surface. But, inasmuch as the character of the injury which produced it is local, it generally occupies but a limited area, and is often, unattended with severe, systemic disturbances. Intra-peritoneal hæmorrhage is a prolific source of peritoneal inflammation. When the blood leaves its vessels and escapes into any of the tissues, it becomes an irritant; it is a foreign body and provokes inflammation. This we see well illustrated in a sanguineous extravasation, consecutive to injury at the knee joint. We may sometimes, after a severe injury of the abdomen, detect sanguineous fluid in the flanks. Moderate leakage will excite but slight irritation; while a large loss of blood with profound anæmia, can only occur, when there is laceration of a solid organ, or a large blood-trunk. In the latter class, death may occur, before reactionary inflammation of the peritonæum, like that following severe contusion.

Infective-peritonitis succeeds abdominal contusions, as a rule, when there is a considerable breach in some of the hollow or tubular organs. It is generally conceded, that healthy bile, pancreatic juice, chyle or urine, are not a source of infective or serous inflammation, unless, the quantity of escape is very considerable. The most fatal complication, is, when the bowel's wall gives way and the peritonæum becomes infected by intestinal gas or fæces. In all the cases of direct intestinal rupture which I have examined *post-mortem*, there was a very large, associate hæmorrhage. In these cases death occurred, before peritonitis developed. The most dangerous type of traumatic inflammation of the peritonæum comes from consecutive perforation of some part of the intestinal-canal. Its advent is sudden and the constitutional symptoms alarming,—there is a species of peritoneal-shock.

The appendix is sometimes exposed to pressure as it hangs over the pelvic-brim, in movements of the infant's head, in the parturient act. Probably, the healthy caudal-appendage, because, of its vermicular properties may easily glide out of the way, as the head engages; but, with a preternaturally long, appendix, which has been

fixed to the fascia, by previous adhesive inflammation, it is greatly exposed to dangerous compression. Possibly, not a few of those cases set down, as salpingitis on the right side, after labor, are nothing other, than a severe, perforating or non-perforating type of appendicitis.

One such case came under my care this year, succeeding a very difficult labor. From the time of delivery, she complained of a severe pain in the right side; but it was not until the third week, that fulminant symptoms developed. Prompt operation cut them short; when a perforation of the appendix inclosed in a large purulent accumulation was exposed. Another case illustrating the effects of injury, as a causative factor in appendicitis, came under my care lately. The patient a boy, of sixteen was injured by a fall on the right groin. He took the bed with signs of subacute peritonitis was up quite well on the eighth day. At this time he passed from under my care. The next day acute peritonitis set in and he died. On autopsy, there was found a large fæcal extravasation from an opening in the appendix.

Renal Injury.—The kidney suffers trauma through force applied, laterally or posteriorly. It is seldom damaged by vertical force, for the reason, probably, that the intensity of impact is spent, before the organ is reached. A violent blow over the loin or a fall sustained here, is a prolific source of laceration of the organ, with interstitial bleeding which drains off, through the ureter; or we may have an extreme rent with a large accumulation within the capsule. In very severe cases, the capsule itself is torn through, and there is a free escape into the loose, retro-peritoneal tissues. This triple complication followed in a case which terminated mortally, under my care early, this year. The injured man had fallen from the cabin of a drawbridge, striking on the side over an iron rail twenty feet below. He was a very heavy man and fell with great force. In about all our cases of severe contusion over the lumbar spine, we will find evidences of renal complication. Hæmaturia is an early and persistent symptom. It is self-evident that violence over the hypogastrium in the pregnant, must be attended with danger to the fœtus; and, in any one to the bladder, when it is distended. But, the bladder for an organ which seems so much exposed is very rarely ruptured by force; except, when there is associate fracture of the pelvic bones. It is not infrequently contused and its inner coats lacerated, when transient hæmaturia occurs but a complete rupture is a very rare accident, indeed. It probably escapes by an alteration of its shape,

or by sinking into the pelvis, when distended making lodgment for itself, by pushing the perinæum outward. In no other manner can it be explained, how it so generally escapes, while its neighboring organs above are so frequently compromised.

115 WEST FORTY-NINTH STREET.

PLASTIC OPERATIONS IN CARCINOMA OF THE BREAST.*

BY J. T. WILSON, M. D., SHERMAN, TEXAS.

While statistics would lead us to believe that carcinoma of the breast is not so common in this country as in England and some other countries, nevertheless its frequency here and its fatality too is sufficient to demand our best attention and careful study.

I believe it is now agreed among a majority of scientific writers that it is primarily a local disease ; that being true there is no reason why early removal should not cure it. It is therefore all-important to make a diagnosis at the earliest possible moment and operate before the glands become involved.

Perhaps in a majority of cases when our attention is first called to it the disease has made considerable headway involving the surrounding glands and probably showing the peculiar taint ; in fact some authors believe the constitution becomes involved almost simultaneously with the glands. It has been observed that metastases occur very early in cancer of the breast which is another reason for immediate operation.

It has been clearly demonstrated that the patient has been rendered more comfortable and life prolonged even in a late stage of the disease when the tissues have been broken down and suppurating, with the neighboring glands much enlarged and the general health greatly undermined.

As soon as the diagnosis is made or even if there is a suspicion of cancer, it is time to remove the tumor.

It is very generally conceded that if left undisturbed it invariably progresses to a fatal issue.

* Read by title before the Southern Surgical and Gynæcological Association, Charleton, S. C., November 15, 1894.

The time usually given for it to run its course is from thirty to thirty-six months.

The younger Gross declared that the operation when it does not cure adds ten months to the life of the patient, but that it definitely cures 11-83 per cent. of all cases and it is safe from reproduction if three years have elapsed since the operation.

Billroth taught that recurrence after a certain length of time, say from eighteen months to two years probably and three years certainly, may be regarded as a new growth and as absolutely independent of the original growth and arises from a cancer diathesis; he thinks the scar furnishes the condition favorable to development.

Halsted differs from this view and thinks that liberation of cancer cells from their alveoli or from the lymphatic vessels may start a new cancer and thinks this theory more plausible in accounting for the late recurrences instead of the cancer diathesis.

It is well known by all who have had some experience with cancer of the breast that it does return in a majority of cases be the cause what it may. My attention was first attracted to this subject of recurrence by witnessing an operation by the elder Gross it being the sixth upon the same patient.

I believe that all cancerous tumors of the breast should be removed no matter what stage they are in if the patient has sufficient strength and vitality to rally from the anæsthetic shock even though it is almost certain the disease will recur. It relieves the patient from pain and the disagreeable odor of the discharge if suppurating, it brings a certain amount of comfort if only for a short season, frees her mind for the time from the oppression and anxiety of the disease and it gives the patient a chance it matters not how slender from immunity of recurrence and the newer operations give a much more hopeful prognosis than the old.

If the wound should heal as it most frequently does it leaves the patient more hopeful and stimulates her with the belief that she is cured, and by relieving her of the anxiety and distress of mind gives her a better chance to build up her general health. There is no doubt that tranquillity of mind has a marked influence over the general health.

I am of those who believe in preparing the system for an operation generally, but in carcinoma little time should be lost in this regard, for the sooner after its discovery the tumor or disease is removed the more favorable is the result likely to be, even a few days sometimes makes considerable difference. As the poison becomes

diffused in the surrounding glands and tissues the entire system is likely soon to become involved and the prognosis correspondingly grave.

The operation for removal of a cancerous breast has been modified by several eminent surgeons. The old elliptical incision once so popular is not so closely adhered to now. Professor S. W. Gross made a circular incision removing the gland and its covering integument, other operators are guided by existing conditions. Another point of decided importance is the removal of the axillary and other neighboring glands. I think a majority of surgeons at the present day, following the suggestion of Küster, are advising the removal of these glands in every case whether they seem involved or not, some of whom assert that often their involvement can not be known until they are cut down upon and examined, and several begin their operations by first attacking the axilla giving as a reason that if the mamma is first removed the necessary manipulation may squeeze the fluid up the lymph channels and thus infect the surrounding glands and tissue.

Volkman discovered cancer cells on the fascia of the great pectoral muscle under the microscope when it appeared healthy to the naked eye and removed it entire, even stripping the muscle of its delicate sheath. Halsted goes even further and removes the greater portion of this muscle, part of the pectoralis minor, the loose tissue connecting the supra- and infra-clavicular glands, stripping the subclavian and axillary vessels of their investing tissue. Halsted's operation is the most complete of any surgeon's with which I am acquainted. Haidenhain believes that even though the tumor be freely movable it has already advanced through fat and cellular tissue to the surface of the muscle.

The thoroughness of the operation in every case is of supreme importance: the entire mammary gland, every nodule, gland and tissue whether cellular or muscular to which is attached the slightest suspicion of involvement should be removed with the utmost care, and all skin investing the tumor should be likewise cut away.

It will not do as was often done in former times to dissect up the skin and leave it for a flap, but it should be removed to the entire extent of covering the tumor in every case.

In many of these operations, in fact in nearly all the flap can not be brought together without considerable stretching even when the skin has been loosened from its attachment for an inch or more around and in many can not be stretched enough to cover the wound

which leaves a granulating surface and sometimes a large one. The sutures that are stretched very tight in attempting to coaptate the edges of the skin cut through to a greater or less degree enlarging their tracks and by the great tension constricting much of the surface, interfering with the circulation and nutrition and thus impeding the healing.

The recurrence of these tumors often takes place in the cicatrix.

Professor Gross the younger who devoted much time to the study of this subject thought it never recurred from the granulating surface and states that "it is a histological fact that granulation tissue will give rise to granulation tissue alone and not to epithelial tissue; the granulating surface may be great or small that has nothing to do with the recurrence," and yet we know that in practice recurrence does often take place in these granulating wounds, sometimes before they are healed over as well as in the cicatrix. It is true that this may be due to the fact that all the tissue containing cancer cells has not been removed.

It has occurred to me that when a large amount of integument has been removed as is sometimes necessary, the attempt to bring the edges of the skin in apposition requiring very considerable stretching and leaving considerable muscular surface uncovered, the granulation is very slow and there was more frequent recurrences than when the wound was covered by healthy skin and the tension not so great other conditions being equal.

From my very limited experience I am led to believe that by transferring a piece of healthy skin from another part of the body and implanting it over the exposed wound the patients made better progress toward recovery, the wound healed more kindly, there were less pain and trouble and a better result obtained. The healthy skin thus implanted seems to have a salutary effect upon the adjacent tissues, it prevents irritation and relieves tension.

In doing this operation the diseased parts should be most thoroughly cleaned in the usual antiseptic manner. The part from whence the skin is taken for transplantation should also undergo the same careful treatment, but all strong antiseptic drugs used in this process should be thoroughly washed off. The wounds and graft should not be irrigated with bichloride or other strong solution. In my humble judgment the application of such drugs to these wounds is injurious, they irritate the parts which do not heal kindly after it.

The skin flap should be transferred from its bed immediately to the wound when hæmorrhage has been controlled, and its under sur-

face should not come in contact with anything but the wound which it is intended to cover.

It can be attached to the edges of the surrounding skin by very few delicate silk sutures sterilized and far apart to prevent too great constriction, apposition made as nicely as possible and held in place by gentle pressure; the parts covered with iodoform gauze over which is placed a thick layer of absorbent cotton, covered by rubber tissue and all confined by a soft flannel bandage.

Great care is necessary in removing the dressing on the third, fourth or fifth day, and should be first soaked in a warm boric solution until it comes away with the least possible traction.

To be successful the care to be used in the details of this operation is very important, it requires to be done under the strictest antiseptic principles and is rather tedious. The careful dissecting away of all glands from the axillary and clavicular regions, the fat and cellular tissue and that part of the muscle adjacent to the tumor likely to be involved with as little loss of blood as possible is necessary to success.

The skin replacing that removed may be in one or more pieces and can be attached to the surface without a pedicle. In removing and attaching this requires the greatest care and nicety of detail, every step to be planned before the operation is begun, with the precaution to have everything ready so that the wound may be covered without unnecessary delay after the tumor has been removed and hæmorrhage controlled.

Krause reported to the German Medical Congress in 1893 a number of operations for various diseases where he covered large skin defects by flaps without pedicle and is much encouraged by his success. He does not include the subcutaneous tissue in the flap, but only the cutis and cuticle.

We need not be discouraged if after removing the dressing in three or four days it does not present what seems to us a favorable appearance, as it takes seven or eight days—sometimes longer—for it to begin to take on new life and healthy action. It requires some time for a reorganization and union of the vessels by which the circulation can be completed and nutrition of the parts begin. Krause gives from three to six weeks for healing to take place.

SUBCUTANEOUS INJECTIONS OF LIQUIDS IN ACUTE
HÆMORRHAGE.*

BY T. J. CROFFORD, M. D., MEMPHIS, TENN.

Having recently read the report of a series of cases from Guy's Hospital, London, and another from the Johns Hopkins Hospital of this country, in which intravascular injections of a saline solution were practiced in acute hæmorrhage, causes me to report some experiences which I have been having for the past few years and to put forward the advocacy of a method simpler than intravascular transfusion for supplying the system with fluid to take the place of the blood which has been lost. I refer to the subcutaneous injection of fluids in quantities sufficient to supply the deficiencies or sufficient to tide the patient over the crisis. The method I have adopted has served the purpose well, and is briefly described as follows:

Make a saline solution of two, four, or six per cent. of common salt in an ordinary water pitcher, pour this into an ordinary fountain syringe, into the end of the tube of which an aspirator needle has been inserted. While the water is running out through this needle thrust it through the skin into the cellular tissue of the flank or back of the patient. It will be observed that several ounces or a pint of fluid will have been deposited under the skin in quite a short while. The position of the needle can now be shifted to another location without fully withdrawing it and another quantity of fluid deposited. This can be done several times, till a quart or more of the fluid has been injected without withdrawing the point of the needle from the original puncture made in the skin.

It will be argued that the intravascular injection is directly into the circulation, and is consequently, on account of its immediate effect, the better applicable to the crises of the acute hæmorrhages which need transfusion most. This may be the case where the necessary apparatus and an experienced operator is at hand and ready to do the operation of transfusion. In other words where you are looking for a hæmorrhage and have prepared for it beforehand, it may be best in certain cases, but this has not been the case in any of the cases of hæmorrhage with which it has been my misfortune to deal.

* Read before the Mississippi Valley Medical Association, Hot Springs, Ark., November 20, 1894.

When we consider the simplicity of the method which I have above described, that no instruments beyond a fountain syringe and an aspirator needle are required, no operation beyond passing this needle through the skin into the cellular tissue; then when we consider the rapidity with which the fluid is absorbed after hæmorrhage, it is very evident that this method is the most feasible and therefore the most applicable, in by far the greater number of cases encountered, whether surgical, obstetrical or medical varieties of hæmorrhage be met with.

I have put the method to test in quite a number of cases, but to avoid tediousness I shall report only three, these being quite sufficient to show its efficiency as well as the ease and certainty with which it can be got to work in emergencies.

CASE I.—Mrs. V., aged thirty-five, was operated upon May 19, 1893, for huge pus-tubes, likely of long standing, firm and universal adhesions. Upon enucleation the hæmorrhage was very great, in spite of my best efforts to control it. By the time the hæmorrhage was under control, the incision stitched up, and the patient placed in bed, it was found that the pulse had failed at the wrist. Considerable quantities of a saline solution were thrown under the skin. In a short while she rallied and made ultimately a good recovery.

CASE II.—Mrs. L., aged thirty, had a tedious delivery on the morning of June 5, 1894. After the child and placenta were expelled she was found to be flowing profusely. A very few moments later she was quite blanched and the pulse had failed at the wrist. The clots were quickly turned out of the uterus and it was irrigated with hot bichloride apple vinegar. With the same syringe a large quantity of mildly saline fluid was injected into the cellular tissue of the back and flank. She rallied nicely and before twenty-four hours was up her pulse was 84 beats per minute and of fairly good volume. Recovery perfect.

CASE III.—Mrs. M., aged forty, was delivered on September 25, 1894. A terrific hæmorrhage immediately followed. The uterus was emptied and she was at once irrigated with a hot bichloride solution. No abatement of the hæmorrhage followed. The uterus was then irrigated with hot bichloride apple vinegar, with still no abatement of the hæmorrhage. The patient was now very much exhausted. The circulation was very feeble. The pulse was 140 at the wrist. The uterus was again quickly emptied and thoroughly packed with iodoform gauze, which controlled the hæmorrhage perfectly. A large quantity of saline solution was injected into the flanks and back and

in a very short while the circulation was restored. Her successful progress was uninterrupted from this time on.

In all probability the first two cases would have died without the transfusion. The third case would likely have recovered without it, but she rallied much more quickly and progressed much more satisfactorily with it. It will be remembered that a large percentage of the patients who die from hæmorrhage rally somewhat and then die some hours or even a day or two later from cardiac exhaustion, incident to the lessened blood pressure.

The operation as above described, if it can be called an operation, is so simple that any assistant or nurse can attend to it, while the surgeon or obstetrician is completing his work. No patient who has lost any considerable quantity of blood should be allowed to go without it, especially if the stomach is not in a condition to absorb fluid.

When death takes place on account of the sudden withdrawal of a large quantity of blood from the circulation, it is because the heart fails to act. The heart fails to act because there is a sudden fall in the blood pressure, which is its continuous direct stimulus.

The diminished blood pressure is relieved within certain limits by the vaso-motor system of nerves stimulating the blood-vessels to contract, thereby adapting the vascular apparatus to the lessened volume of blood.

If the hæmorrhage is sufficiently slow for the vaso-motor contraction of the blood-vessels to keep pace with it, then life can be sustained with a proportionately small quantity of blood.

From the foregoing the interdependence between the blood, the vascular apparatus and nervous system is apparent. The indications, then, are first, to stop the hæmorrhage; second, to increase the volume of the circulating medium; third, to sustain the heart and nervous system during the crisis.

It will be remembered that the middle coat of the blood-vessels contains both non-striated muscular fibers and yellow elastic tissue, the former predominating in the small and the latter in the large vessels. In algid congestions there is a recession of the blood into the large vessels in the interior of the body, leaving a diminished quantity in circulation. It is possible for one to die with all the symptoms of hæmorrhage, the blood being poured into the large vessels instead of upon the ground. The remedy for present relief of the two conditions would, theoretically, be the same.

ACUTE PERITONITIS.*

BY RICHARD DOUGLAS, M. D., NASHVILLE, TENN.

The mass of confusing and contradictory literature that one encounters in the study of peritonitis renders the subject as difficult to treat from the essayist's standpoint as it is in the therapeutic sense. If one will take the trouble to analyze the hundreds of reported cases, and critically read the more pretentious articles, he must be impressed that as yet there is no very well defined idea, no generally accepted teaching upon the nature of this affection. A prevailing fault with the general contributions to this subject is a failure to correctly classify the different forms of the disease. It is all-important to recognize the wide difference between localized infection, circumscribed area of inflammation, if you so choose to style it, and the contamination of the general peritoneal membrane with its necessary systemic intoxication.

In the short time allotted me I shall deal with acute peritonitis in its broadest sense. Tubercular peritonitis, chronic peritonitis in all its forms, and localized peritonitis, are not in any way referred to. In the report of cases which I append, the character and extent of the pathology was determined by the disclosures of the operating table. Nothing has been taken for granted.

Is it not now generally conceded that peritonitis in all its protean types, depends almost, if not entirely, upon micro-organisms? There are those who believe in the idiopathic form of this affection. Conspicuous among them is Senn. I can not presume to assert that the disease is absolutely an entity, of germ origin, yet such is my belief founded upon close study of the researches of bacteriologists. All surgeons are willing to accept the infective origin of the disease in those cases occurring in the presence in a parietal wound, or in the progress of a neighboring suppuration. There still remains a large number of cases dying of so-called idiopathic peritonitis, the true pathology of which we could not grasp, until it became an established fact that certain germs did under favorable circumstances pass through the intestinal wall, and by their presence and action produce peritonitis. This was a decided advance and before it vanished the material support of the adherents of the idiopathic idea. Cornil

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found bacteria actually in the substance of the wall of a partly necrosed intestine (Treves). In general septic peritonitis following intestinal wounds, perforating ulcer, etc., a special bacillus was found to be constantly present, the *bacillus coli communis*. It was known to inhabit the intestine under normal conditions, therefore its presence in the peritoneal effusion, after intestinal perforation, was considered of no ætiological significance. Further study of peritoneal exudates demonstrated the existence of this bacillus in peritonitis not due to perforation. Its pathogenic significance was then deemed of more importance, and finally when this anaerobic bacillus was actually discovered on its journey through the wall of a necrotic gut (Cornil and Treves) it at once assumed rank as a potent factor in the production of peritonitis. Observers were not slow to grasp the essential fact that so long as the intestinal tube remained in normal condition this bacterium showed no disposition to escape from its natural habitat, but when disordered circulation, strangulation, extreme distention, undue pressure or mechanical injury impaired the integrity of the bowel, and lowered tissue resistance a migratory spirit was at once incited in these bacteria. The behavior of this colon bacillus of Escherich after it reaches the peritoneal cavity depends more upon the resistance there met with than upon any characteristic of the special germ. It is well known that these bacteria are facultative anaerobics, that they are pyogenic in character, having been found in man in a state of almost pure culture in the pus from an ischio-rectal abscess (Treves) and in a general sense they are pathogenic by reason of the toxic ptomaines produced by them, and because of the local inflammatory process which they produce (Sternberg). They also do, perhaps, multiply in the blood, hence, producing both septicæmia and toxæmia. The conditions under which the *bacillus coli communis* is found as the predominating organism are in all types of peritoneal inflammation of intestinal origin. I can not better illustrate my meaning than by borrowing from Mr. Treves Macaigni's table of thirty-five cases of peritonitis of intestinal origin, in which the colon bacillus was practically always present.

Macaigni's Table.

With troubles in the appendix.....	10 cases
With typhoid fever	9 "
With ulcerative enteritis.....	6 "
With perforation	3 "
With cancer of colon.....	3 "
With hernia.....	2 "
With thrombosis of mesenteric vessels.....	1 "
With ulceration of the gall bladder.....	1 "
Total.....	35 cases

Appreciating the condition under which the colon bacillus may escape from its natural habitat, and become actively pathogenic, and knowing the supply is unlimited, the dose being governed alone by the integrity of the bowel, naturally we accord to this bacillus the first place in the causation of peritonitis. One can scarcely conceive of an intra-abdominal disease or injury that does not furnish the physico-chemical conditions essential to the action of this germ, yet in according all proper distinction to this, we must not be unmindful, for clinical reasons, if for no other, that long before we were acquainted with the morphology of Escherich's organism the potency of certain pyogenic bacteria of the streptococcus type had been demonstrated by Bumm, Fränkel, Renne and their work corroborated by a host of followers. These organisms were always introduced from without, and their source could generally be ascertained, and fortunately the supply being often limited, the results were not as destructive. I would argue, however, the disturbance consequent upon the infection of the peritoneal envelope of the viscera establishes at once Grawitz' ideal condition of lessened tissue resistance, which rallies to the field of battle the hitherto neutral colon bacillus, so that in the shortest possible time your case becomes one of mixed infection, the toxic features being largely due to the intestinal organisms. Yet, it is quite well known that puerperal peritonitis is almost always originally due to one germ—the streptococcus. In obedience to the teachings of experimental work, the surgeon must accept the classification of Pawlowski of two forms of peritonitis: 1. That produced by chemical agents, with which we are not concerned. 2. That produced by infection. The latter is more tangible. It is fully in accord with our idea of the genesis of the disease. It harmonizes with the clinical work. With Mordecai Price, I must agree that every case of general peritonitis has a demonstrable cause, and that cause is septic in character. Pathological manifestations of peritoneal infection are subject to many variations, which, in a great measure, indicate the violence of the poison, and guide us in forming a prognosis, but to simplify matters, we may consider it under two heads, which are fairly illustrative of the microscopic and macroscopic changes—the results of general peritonitis.

First: The peritonitis mycotica is, I take it, synonymous with the septic peritonitis of Mikoulowlitz. This form of inflammation usually follows sudden outpouring of intestinal contents into the peritoneal cavity. Death is likely to occur at once from intoxication. If the cavity is examined very slight changes will be remarked. A yellow-

ish green ichor may be the only manifestation. Should, however, the patient survive the onset, there quickly forms a sanguino-purulent fluid with but little tendency to fibrinous deposit. There is slight injection of the entire peritoneal membrane, no very gross changes.

The next type observed—the fibrino-purulent—is a much milder infection, slow in its onset, and is therefore met by decided structural changes. There is great congestion of the peritoneal membrane; flakes of fibrinous deposit are found throughout the peritonæum. A strong effort is made by Nature to circumscribe by adhesions the infected areas, thus retarding the progress of the disease. Ultimately, however, the cause still acting the adhesions yield, and general purulent peritonitis follows. To the inexperienced observer fibrino-purulent peritonitis appears by far the more malignant, when quite the reverse is true. The purulent exudate and fibrinous deposits are only evidences of Nature's resistance. Clinically speaking, we are frequently forced to content ourselves with the surgical diagnosis of the secondary condition of peritonitis, relying upon the revelations of the operation to establish the true pathology. It is, however, an indisputable fact that the type and virulence of the inflammation is largely dependent upon the origin—hence in our bedside work, we may consider the subject under the following ætiological classification :

Extraneous Infection.	Immediate.	{ This is direct infection of the peritoneal membrane through penetrating wounds of the abdomen, either accidental or surgical.
	Mediate.	{ This form embraces all cases of contamination of the peritonæum occurring from extension of adjacent infected areas, as leakage from mural abscesses, or puerperal infection.
Intestinal Infection.	Immediate.	{ Visceral perforation or rupture and direct inoculation of the peritoneal membrane with escaping contents, as perforating typhoid or gastric ulcer, appendicitis, or rupture of intestine.
	Mediate.	{ Infection from emigration by micro-organisms through visceral wall of impaired resistance, as in incarcerated hernia, intestinal obstruction, ruptured ovarian cyst.

It is proper to refer here to those rare cases of peritonitis occurring with attacks of pneumonia, rheumatism, etc., but having no acquaintance with such types, and very seriously questioning their ætiology, I will not devote further time to their consideration. In my abdominal work, I have met with peritonitis sufficiently often to warrant a record of a brief summary of a few illustrative cases, the treatment employed, the results, and endeavoring, as the cases are called, to assign them to their proper class.

CASE I.—Mrs. K., aged twenty-four. April 28, 1893, was submitted to operation for supposed intra-peritoneal rupture of ectopic gestation, accident occurring eleven hours before operation. The clinical history and physical signs warranted the diagnosis. At the time of operation she was *in extremis*, temperature 99° , pulse 140, hurried, thoracic respiration, the face was dusky, cyanotic, features drawn, great anxiety and restlessness depicted in her countenance, abdominal muscles rigid, sensitive to hyperæsthesia, slight tympany. This condition of shock was attributed to hæmorrhage, therefore operation was undertaken before thorough reaction was established. The cavity opened, a quantity estimated as one quart of brown sero-purulent effusion escaped. It was horribly offensive, and well it might be, for on examination it was found to contain fæcal matter. The seeds of strawberries, eaten two days before, were scattered about within the peritoneal cavity. Not an adhesion was seen. The general contents were bathed with this septic material. Immediate search was made for the appendix. To my surprise, it was entirely gone, leaving a round ulcer, the size of a dime, perforating the caput coli, through which escaped the intestinal contents. This escaping material entered directly the peritoneal cavity, contaminating everything. The edges of the ulcers were trimmed, and perforations carefully folded in and sutured. The cavity was thoroughly irrigated with gallons of hot water; the intestines and omentum were washed, ample drainage—glass tube and gauze—was used. The operation was done in great haste owing to the extreme condition of the patient. When taken off the table I feared she would not react. Under strychnine and other stimulants she revived, and the case progressed uneventfully until the third week, when symptoms of intestinal obstruction developed. The cavity was promptly opened, and a coil of intestine was found twisted upon an adhesion. This was freed. The patient now went on to slow, but absolute recovery, and she remains a perfectly well woman to-day with none of those post-operative symptoms, which are so likely to follow where there has been peritoneal inflammation.

Remarks.—The operation in this case was undertaken upon an erroneous diagnosis. Not by way of excusing myself, but with the hope that it may be profitable to some, I will indicate the sources of error. A young healthy woman passed six weeks without menstruating, then irregular uterine hæmorrhage, appearing suddenly and as quickly ceasing, paroxysmal colicky pains in the lower abdomen, a swelling in the right broad ligament, sudden onset of abdominal symptoms, intense abdominal pain, a quick, soft, almost imperceptible

pulse, rapid respiration, cold limbs and extreme prostration were the misleading features that called forth the diagnosis of ruptured tubal pregnancy. The ætiology and pathology of this case assigns it at once to the class of the *diffuse septic peritonitis*. The infection was from within, of immediate intestinal origin. The perforation in the cæcum permitted the escape of contents of the gut directly into the cavity. It certainly was *diffuse septic peritonitis*. The dose of infection was so large, the toxæmia so profound, I mistook the shock it produced for hæmorrhage. That it was general can not be denied—not an adhesion was found, yet this woman recovered. Mr. Treves says: "I am doubtful if a single human life has been saved by surgical interference in a genuine case of peritoneal toxæmia," and he is an honorable man—an indisputable authority. Will you, gentlemen, indicate my error? Am I improperly recording a case? I consider the recovery of this case to be due to three things: First, prompt operation; second, multiple incision; third, thorough irrigation and ample drainage.

CASE II.—Miss R., prostitute, patient of Dr. James Stephens and Dr. Menees of Nashville. Pyosalpinx following criminal abortion. One of her physicians, while conducting an examination, ruptured the pyosalpinx. The patient appreciated the accident and said something had burst within her. In twenty-four hours there were general symptoms of suppurative peritonitis. I urged operation, but it was declined. The patient appeared in fairly good condition, pulse well sustained, and temperature marking 100° and 101° . On the fourth day after the accident, we obtained consent to operate. When the cavity was opened several pints of thick, purulent, but not offensive fluid escaped. Strong adhesion bound coils of intestines in pelvis together, yet these barriers had been broken down and septic matter had invaded the general surface of the peritonæum. Thorough irrigation and drainage constituted the treatment. Decided temporary improvement followed the operation, but she died at the end of the third day of septic intoxication.

Remarks.—There is but little to remark upon this case, except to cite it as another illustration of the fatality of delay. Our experience teaches us all that temperature is no guide in peritonitis. Dalton of St. Louis has written at length upon this point. In this particular case, in the four days following rupture, temperature remained under 101° , and the pulse of good volume, varying between 90 and 110. All of this with a belly full of pus and not one adhesion to fence it off. Does it not show that certain individuals enjoy a comparative immunity, or does it prove that the *streptococcus pyogenes*, the active

micro-organism in puerperal infection, does not produce such violent systemic intoxication as the colon bacillus. This case is one that should be classed as purulent peritonitis. Mediate infection from without through the genital tract.

CASE III.—Miss W., patient of Dr. Swaney of Gallatin, Tenn. History of intestinal obstruction of six days' duration. When first seen by me she was *in extremis*, temperature 97° , pulse almost imperceptible, and too rapid to count. Appreciating the gravity of the case, and recognizing that her only hope lay in a surgical operation, I resolved to hazard the procedure. The cavity was quickly opened: there gushed forth a quantity of pea-soup-like fluid, and coils of distended intestines bulged through the wounds. Seizing the presenting coil, it was drawn out and freely incised, thus relieving the gaseous and fluid distention. This wound was carefully closed, and now with flaccid gut and empty cavity, I sought and found the source of trouble. It was a band of adhesion stretching from the omentum to the gut under which had become ensnared several feet of small intestine. Flakes of fibrinous deposit were patched about the peritoneal surface. There was no matting of the intestine, nor effort on the part of Nature to limit or circumscribe the inflammation. The cavity was thoroughly irrigated, a quantity of water left in and drainage established. The condition of patient improved constantly during operation. Her recovery was uneventful. Her subsequent history is one of perfect health.

Remarks.—The recovery of this patient was a source of great gratification to me. It makes a striking reality of the metaphor "taken from the jaws of death." There is nothing unusual in the case. It merely furnishes an illustration how a purulent peritonitis may develop by auto-infection through tissue of impaired resistance. The strangulated and distended gut was the medium through which the colon bacillus passed. Fortunately her vital forces resisted the invasion, the plastic exudate marked the battle-ground, finally Nature succumbed to the functional disturbance and to the gradual dose of infection, and the patient was dying of exhaustion and toxæmia. Perhaps in this case it was not necessary to irrigate. Dry gauze might have cleansed just as thoroughly—so say some—I do not think so.

CASE IV.—Mr. E. H. I found him lying in my office bathed in cold perspiration, almost pulseless, short, shallow respiration, cyanotic, screaming with intense abdominal pain. The muscles of the abdomen were as hard as a board, and strongly retracted. McBurney's point was no more pronounced than any other point. From pain

and shock he was slightly delirious, yet I elicited that he had had pain in the right inguinal region for two or three days, though not sufficient to confine him to his home. From this meager history and the present condition of patient Dr. Wilson and myself diagnosed perforated appendicitis. He was moved to his home. The intensity of the shock seemed so great that I did not deem it wise to operate at once. I resorted to proper stimulation. That night at eleven o'clock, nine hours after the accident, his condition was considered suitable for operation. The usual lateral incision was made. On opening the peritonæum a little greenish-yellow fluid with fæcal odor escaped. The appendix was found, small, gangrenous and perforated. This was removed and stitched over. The head of the colon was unhealthy and a point of perforation just above the attachment of the appendix was found and closed. Believing the general cavity infected, a free incision in the median line was made for irrigation and drainage. The patient did well for twenty-four hours. Reaction was thorough. Septic peritonitis developed later and he died in fifty-six hours.

Remarks.—The unfortunate issue in this case does not deprive it of its interest or lessen its teaching value. You will please note that this gentleman engaged in his daily occupation was seized while walking along the street with violent abdominal pains which proved to be due to the perforation in the cæcum at the base of the appendix. This in itself is worthy of record. Abdominal rigidity is incidentally alluded to by all as one of the phenomena of intra-abdominal trouble. In this robust muscular patient the rigidity amounted to a clonic spasm of the abdominal muscles. These were absolutely so resisting that you could not depress them. They were so much retracted that they appeared to lie flat against the spine. There was also general abdominal hyperæsthesia. This reflex nerve phenomenon is due to the sudden impression made upon the nerve centers within the belly, the solar, cœliac and superior mesenteric plexuses. And it is noteworthy that the contribution they receive from the spinal nerve is derived in whole, or in the greater part, from the lower seven dorsal nerves through the splanchnics (Treves), and as you are aware these same dorsal nerves supply the integument and the muscles of the belly. This muscular rigidity is never seen in old chronic cases. It is only marked when a sudden impression is made upon a peritonæum, previously healthy. So says Treves, and it was certainly apropos of this case. The shock in this case was extreme. Certainly so slight a lesion does not explain it. It is attributable to the quick absorption

by the healthy peritonæum of the septic matter. This, and this alone, could produce such depression of the vital forces. The poison of the most venomous reptile could not have acted with greater rapidity and with more virulence. The operation was done as quickly as his condition would admit. Too soon to note any macroscopic changes except at the point of infection. A little greenish fluid was the only exudate. This case should be classed an immediate infection from within resulting in diffuse septic peritonitis.

CASE V.—Master D., aged seven, patient of Dr. Woodson of Gallatin, Tennessee, for three days had suffered with symptoms of appendicitis. When I saw him, his temperature was 99° , his pulse 140. The general and local symptoms were those usual to this disease. I advised immediate operation, found sero-pus, a gangrenous appendix and a free communication with the general cavity. No effort at adhesion. I carefully cleansed the part locally, left the incision wide open, packed with gauze and did not irrigate. Patient died in forty-six hours with symptoms indicating septic peritonitis. No post mortem.

Remarks.—Without discussion we can assign this case to the category of immediate infection from within with the *Bacillus coli communis*.

CASE VI.—Mrs. H. Diagnosis of fibroid tumor with some acute complication, probably torsion of pedicle and consequent peritonitis. When the peritoneal sac was opened a quantity of sero-hæmorrhagic fluid escaped. The tumor, larger than an adult's head was black, almost gangrenous. It had rotated on its pedicle, completely strangulating circulation. There was no accessory adhesion for nutrition, hence death of the mass was inevitable. The parietal and visceral peritonæum throughout was of a deep red color, flakes of fibrinopurulent material were deposited here and there. Supravaginal hysterectomy, with ventral fixation of stump, irrigation and drainage completed the operation. Uninterrupted recovery. Unusual good health since.

Remarks.—This patient, although the subject of a large uterine fibroid had enjoyed the most remarkable health. There was no insanity here, Dr. Price, no pus tubes, but the slender pedicle in an unfortunate moment became twisted. Sero-fibrinous peritonitis followed. In this, as in Case III, the germs of infection were invited by the favorable condition of the tissue.

CASE VII.—Mr. B. Patient of Dr. T. G. Shannon. Taken with appendicitis Friday night at five o'clock. Case proved to be a very

rapid one. I first saw him Sunday at 2 P. M. His rapid pulse, low temperature, greatly tympanic abdomen, rigid muscles, thoracic respiration, and Hippocratic countenance bore convincing evidence that perforation had occurred and that he was laboring under the toxæmia of general peritonitis. Immediate operation was determined upon. Peritoneal cavity was found full of sero-purulent matter. There were no adhesions nor fibrinous deposit, the septic material was generally disseminated throughout the cavity. Irrigation and multiple incision for drainage were employed. Patient did remarkably well until the end of the third day. He grew suddenly worse, abdomen became greatly distended, and he died with all the symptoms of sepsis.

Remarks.—I shall only remark upon this case to express the belief that I committed an error. Had I made multiple incision after the method of Witzwell, had I incised the distended bowel, evacuated its contents and irrigated the intestine, the efficiency of which procedure was accidentally discovered by Reibel in 1883, had I more thoroughly irrigated the general cavity, the patient's chances for recovery would have been greatly enhanced. He died of general purulent peritonitis produced by immediate infection from within.

CASE VIII.—Mr. S. Patient of Dr. W. G. Black. Eighteen months ago I operated on this man for appendicitis; found quite a collection of pus and a rotten appendix. Ligated stump but did not invert it into cæcum. The silk ligature came away, the patient made a good recovery. On August 31st he had a chill followed by high temperature, excessive nausea, vomiting and constipation. I saw him September 1st at 11 P. M. Advised immediate operation. He refused to be moved to the hospital, and we decided to defer it until the following morning. At that visit all symptoms appeared relieved and we temporized. On Wednesday, September 3d, while carefully examining the abdomen, using I am quite sure, but little force, he complained of a sudden pain in his penis and a great desire to pass his urine. The pain was intense. He quickly passed into a condition of extreme shock. His pulse became almost imperceptible, thinking that rupture of the abscess into the bladder had occurred, a catheter was passed with negative result. He did not react from the shock for several hours. Indeed so ill did he seem to be that I abandoned all thought of his reviving sufficiently to justify surgical interference. During Thursday the 4th his condition was very bad. Thursday night he rallied, his pulse became stronger, though the belly was still very tympanic. He seemed to be in a fair condition the next morn-

ing and operation was determined on. The stomach was well washed out before giving the anæsthetic as a preparatory measure. The abdomen was freely opened in the median line, a quantity of fœtid purulent matter, at least a quart in quantity gushed forth. It came from every part of the cavity, from diaphragm to Douglas' pouch. I washed and rewashed the intestines, especial care being given to the omentum ; and fearing insufficient irrigation I made a second lateral incision at the site of the old operation. Carried it well back so as to drain the lumbar region. Gallons of hot sterilized water were used in this cleansing process. Ineffectual search was made for the point of perforation. The old adhesions about the caput coli so fixed that gut that I could not discover exactly the source of the infection, and I must confess that I was not very diligent in my search. The condition of the cavity did not warrant hope of recovery. I completed the operation with the one idea that if anything would purify him he should die with clean insides. Strange to relate I was repeatedly assured during the operation by Dr. Fort, the anæsthetizer, that the general condition of the patient was as good, if not better, than when first put on the table. Free gauze drainage and the ordinary dressings finished the operation. There is nothing more to say. His bowels moved that night and continued to act freely. He is well to-day, now ten weeks since the operation.

Remarks.—I am quite well aware that the report of quarts of pus being evacuated from the peritoneal cavity will be accepted *cum grano salis*. One of our distinguished fellows is on record as skeptical upon this point, yet I aver that in this case the pus bathed every abdominal viscus. There was no adhesion except those remaining from preceding inflammation. Perhaps the opponents of irrigation could have cleaned this cavity by dry mops. I did it effectually with water and under similar circumstances should employ the same treatment with renewed confidence. The recovery of this case of general purulent peritonitis was due entirely to the free incision, thorough irrigation, and ample drainage.

SIMULTANEOUS APPEARANCE OF CANCER IN BREAST
AND UTERUS.*

BY JAMES EVANS, M. D.

Multiple primary cancer is an exceedingly rare form of disease, even when it occurs in contiguous parts of the body, but its appearance at the same time in such widely separated organs as the breast and uterus is such an unusual pathological occurrence as to make every instance of it worthy of being placed on record.

The subject of this interesting manifestation of the disease was a lady fifty-three years of age, married, and the mother of six children. She was a woman of good physique, somewhat above medium size, and had always led an active life and enjoyed most excellent health. Her labors had been natural and easy, and the menopause occurred at forty-six and passed through without much discomfort or leaving behind any impairment of health. Her father died of cancer of the face, her grandfather of cancer of the stomach, and she had also a first cousin who had cancer of the breast which I assisted another surgeon to remove by operation only a few months before meeting this patient. Speedy recurrence of the growth took place in the cicatrix of the wound in this case, and death ensued a short time afterward. Her mother, sister, aunt and granduncle died of consumption.

In January, 1889, this lady consulted me on account of a vague sense of weight and uneasiness in the back and between the hips, which was accompanied with a thin leucorrhœal discharge from the vagina, and occasionally with a slight show of blood, which she attributed to a threatened return of her monthly sickness. Vaginal examination disclosed a movable uterus with a cervix somewhat swollen tender and enlarged. Passing the finger on the cervix and letting it glide over the vaginal surface any adventitious growth below the mucous membrane will cause the tissues to be less pliable and the movement naturally imparted to them by the finger will be retarded and less free and easy than in the normal condition. According to Spiegelberg this is an early test for cancer and he not inaptly compares it

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to the sensation experienced in rubbing the finger over a wet piece of India rubber. This test was exemplified in this instance. The speculum revealed a slightly patulous os, with a narrow zone of livid redness encircling it, whose boundaries were abrupt and clearly defined and in this red spot were several nodules of a darker hue in color. The disease was confined to the cervix and during its course never extended farther than the internal os. At the time of the first examination the parts were gently cleansed of all discharges and an application of equal parts of tincture of iodine and carbolic acid was made. From time to time afterward various alterative and astringent substances were applied but the only effect observed on the disease was to stimulate it to greater activity. On one occasion the os was dilated and the cervical canal was thoroughly curetted and a strong solution of zinc chloride applied to the surface. The disease however was not checked in its progress but continued its ravages until the cervix was deeply excavated and became a mere shell.

In the left breast a little above and to the left of the nipple was a hard lump the size of a small filbert which occasionally she complained was the seat of sudden and transient pain. This small tumor when pressed from behind against the rib was apparently of woody hardness, but was nevertheless freely movable and with loose attachments to the gland. There was no enlargement or prominence of the axillary glands at this time. This growth slowly began to enlarge and was frequently the seat of occasional sharp pain during the years 1889 and 1890. In 1891 the tumor had grown to the size of an egg, and became attached to the skin. A few months later the adhesion to the skin was firm enough to cause considerable retraction and discoloration at the point of attachment, and it was evident that ulceration would soon take place. In another year the whole gland had broken down and disappeared, and was extending along the lymphatics to the enlarged glands in the axilla. In 1893 the excavations in the tissues from repeated sloughs had extended and involved the axillary glands even to the posterior axillary fold. The left arm now became enormously swollen, and pulse almost imperceptible at the wrist. Although the loss of strength and flesh and the pale and exsanguinated appearance of the lady gave unmistakable evidence of the profound impression the disease had made on the constitution yet she continued to perform most of the household duties and only required a grain or two of morphine daily to relieve the pain. The growth had now involved the axillary vessels, and as the tissues in which they were imbedded were continually sloughing away, rendered

it exceedingly probable that the termination of the lady's life would be due to hæmorrhage. The day before her death she was engaged in her ordinary pursuits and retired at night feeling quite as well as she had for some time past. Just before sunrise she felt the most excruciating pain in the heart and expired in a few minutes. No post mortem was allowed to determine the immediate cause of death, but it is probable that it was caused by a thrombus detached from the axillary veins and carried to the heart.

A striking peculiarity in the history of this case, is, that when the disease was most active and destructive in the breast, that it rather checked and retarded its tendency in this direction in the uterus.

In looking up the literature of multiple primary cancer among various medical authors and journals which have been accessible to me I have found only mention made of it by Mercanton in a very interesting essay on the subject which appeared in *Revue méd. de la Suisse Rom.*, and a short abstract which appeared in epitome of the *British Medical Journal* for June 24, 1893. This author considers the simultaneous appearance of primary cancer in the breast and womb of such rare occurrence as to be truly phenomenal and declares that in all of his researches he has not been able to find a single trustworthy report of the phenomenon in the breast and uterus of a patient. He then gives the history of three cases which came under his own observation. In his first case there were indications of the disease in the uterus a year before it was discovered in the breast; in the third case the tumor occurred in the left breast two years before its appearance in the uterus. He contended however, that the simultaneity of the disease was evident in both instances. In his second case the disease was present in both breast and uterus in an advanced stage of its development. The present case is unique in that the disease in both breast and uterus was seen in the early stage of its growth before any breaking down of tissue had occurred.

Excision of the cervix, and removal of the breast was proposed to this lady, but she declined; influenced no doubt by the unfortunate result which followed operation on her cousin. Although there is a very general consensus of opinion among surgeons that the most successful treatment of cancer affecting the breast and uterus is early and radical removal by the knife, yet it is doubtful if operation is advisable when the disease appears in multiple form and in distant organs. When the disease is confined solely to the uterus and recognized at an early period of its invasion, the prompt removal of the organ is usually followed by permanent recovery, in fact, recurrence

less often takes place than after removal from any other organ or part of the body. Mammary cancer spreads very rapidly along the lymphatics and it is impossible to determine when the glands in the immediate vicinity become infected, and for this reason removal of the breast is usually followed by secondary growth in the cicatrix, and it is doubtful if operation is admissible in this locality if more than six months have elapsed since the commencement of the disease.

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This visiting list is one of the neatest which has come to our notice. The thirty-two pages of data useful to the physician, including a complete list of drugs with their doses, is concisely stated and systematically arranged. It is difficult to see how so much useful matter may be got into such small space and in such available form.

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EDITORIAL.

ANNOUNCEMENT.

Early in the new volume which begins with this month, we hope to inaugurate a series of papers by men especially eminent in the branches of obstetrics and pædiatrics. We shall endeavor with each issue to present at least one paper on one or other of these subjects. In the prospectus of the first number of the first volume, we referred to both these subjects in an especial manner, as coming within the proposed scope of this publication. Circumstances have prevented us hitherto from presenting either in a distinctive manner but hereafter, although this Journal will remain peculiarly devoted to gynæcology, its congeners, obstetrics and pædiatrics, shall receive a share of regular attention. The wisdom of this course, which appealed to us at the outset, has been but confirmed by our advanced journalistic experience. Gynæcologists owe much to the obstetrician of the past for, with all respect we say it, gynæcology must refer not only its birth but, to a great extent, its present continuance to obstetrical mistakes. The corollary is, in our opinion, equally true, that it lies with the scientific obstetrician of to-day not only greatly to limit but almost to destroy, as a specialty, the former science.

In pædiatrics, we find the future subject for gynæcological interference and, it is not too much to say, when this specialty joins its forces to those of obstetrics, intelligently and with a clear knowledge of its responsibilities toward the future woman, gynæcology will die of inanition. It is evidently, therefore, to the interest of humanity if not to that of gynæcologists that these three subjects should be, when feasible, conjointly studied and encouraged.

In addition to special original papers we will present regularly a

synopsis in our "Abstract" department of the progress of obstetrics and of pædiatrics, primarily in this country but also abroad. These abstracts shall be arranged somewhat in the manner of the "Status of Gynæcology Abroad" which has proved of especial interest in the past.

We would also announce that all contributors of original papers will receive as hitherto *one hundred and fifty reprints without covers, free*. When fifty or more extra reprints *with covers* are ordered, the latter will be supplied with all.

OPERATIVE GYNÆCOLOGY AND THE JUDICIAL MIND.

In every form of intelligent inquiry the judicial mind, or that mental attitude which at once refers every new suggestion to a standard of previous knowledge, is the foundation of success. The theologian judges every moral question from that standpoint of right and wrong which he believes to be true; the lawyer, before entering a new plea, consults previous rulings for precedences which shall, at least, not invalidate his claim; the educated mechanic applies the rules of his science to the working out of every new idea, and even the general surgeon, though his standards are less exact, will consider no new operation without first applying to it the accepted laws of anatomy and physiology. It is unfortunate that so many confound the judicial mind with the prejudiced mind and thereby prove their possession of the latter quality. The former is logical and open to the acceptance of every new idea, which is not fundamentally opposed to facts which it has previously proved and accepted as true; moreover, it is willing to change its standards and to repudiate its previously accepted facts, when these are proved to have been false conceptions. The prejudiced mind, on the other hand, is one which not only refuses to receive new ideas, even when not opposed to its standards, but equally resents all proof of the falsity of the standards themselves.

We have said that there is a common tendency to confound these very different attitudes and that this is unfortunate; for it has led many who would run from the charge of prejudice into the very danger which they are so anxious to avoid. To support their claim to progressiveness and want of bias, they eagerly seize upon every new idea and proceed to put it into immediate practice, without a

thought to its inherent probability or its possible appropriateness to the application desired.

It is in the "specialties" of surgery and, to us at least, most noticeably in gynæcology, that we find this "hunger after new things"—not a natural appetite but a morbid craving—and the absurd and often cruel excesses for which it is responsible. This is exemplified in our societies constantly. We dare to say that any prominent specialist may announce, in such a meeting, that he had used upon a certain number of cases a certain new procedure with success and, although this operation may be contradictory of all previous practice and belief, immediately a number of men will arise, without time for thought, and will promise to put it into practice at the first opportunity. It is idle to argue with such minds that the operation is clearly opposed to anatomical and physiological facts. Their answer is: "Try it before you condemn it." As who should say to an architect: "Make me a column whose base shall be lighter and smaller than its capital," and to the latter's protest comes the answer: "Try it first before you condemn it."

If we look outside our societies, we will find many evidences of the same prevailing disposition. Do we not almost daily see men perform operations with entire complacency which, though fathered by distinguished men, are demonstrably opposed to the simplest mechanical principles? Do not many operators adopt indifferently any one of several operations for the repair of the same injury, although these different procedures are not only opposed to each other in principle but were invented by their several authors for the very reason, that their standpoints of the indications to be met differed radically? Another evidence is presented in the so-called "Systems" which are now enjoying great popularity. Can anything be more absurd than to call that a "System" which must necessarily be without system? and of what value, as a teaching agent, can such a book be, which portions out each subject to a separate writer who is chosen, not because he has any ideas in common with his fellow authors but only because it is thought that his name will prove a bait for the thoughtless buyer? The absurdity of the scheme will at once become apparent if we will assume that Dr. Emmet, for example, writes an article on laceration of the cervix and, in the same volume, Mr. Tait writes one upon prolapsus uteri as the result of parturient injuries. Dr. Emmet considers the laceration a prime factor in prolapsus and the remedy of the laceration to be the first and a necessary step in the cure of the prolapse. Mr. Tait, on the other hand, considers

the laceration of no importance whatsoever and has altogether contrary views as to the pathology as well as the indications in the former condition. This may seem an extreme case, but is it so exceptional and does it not show the absurdity of the principle upon which the "Systems" are founded? How is it possible for the student of gynæcology to derive any benefit from these "grab-bags" of knowledge?

The same lack of consistency or whatever you may care to call it—it has other names—is also conspicuously met with in those textbooks which, although written by one man, present with equal authority and with no attempt at preference or serious criticism, the various and opposed operations of many men for the cure of the same morbid condition or disease. Yet these "compendiums," which can claim no atom of originality (except from a *psychic* point of view), were never more popular than now. Yet it is a natural thought, that the intelligent reader, who should find himself in such a pantheon of gynæcology, would instinctively cry out for an "altar to the Unknown God."

We regret to say that we can see as yet little tendency toward improvement, but we know that a change in the right direction must eventually come. It is impossible that the scientific spirit will not finally prevail.

We must not forget, moreover, that the present condition is undoubtedly reactionary. In the early days of modern gynæcology in this country and for many years thereafter, one or two men were the acknowledged teachers and undisputed authorities in the new science. Their followers were either too lazy or too indifferent to enter into a personal proof of the theories advanced and the deductions derived from them. They were content to accept everything from these sources with unquestioning belief. The theories themselves were understood but not the long line of reasoning following years of gradually acquired experience. It is a poor compliment to a master when his disciple says: I believe everything you say *because* you say it, but I shall not take the trouble to find out why you yourself believe it true. Yet this was practically the attitude of the profession toward the early exponents of gynæcology, until the cry of opposition was raised by outsiders who had never belonged to this cult. Then many of those who were the most ardent worshipers suddenly asked themselves the question, Why do we believe? and could make no answer. Not being willing to repudiate themselves, they repudiated their former belief as false. There was still another class who maintained their professions

of faith but, having no more reasonable foundation for it than the others, they were unable to develop it or to apply it to new conditions. These also, therefore, gradually wandered away and finally joined, with the preceding class, the ranks of the "progressionists"—of those who do not cultivate the "judicial mind." And now, in order to escape the leadership of one man, they follow blindly the call of every man who speaks and, in their endeavor to emphasize conversion from their former belief, they are "blown hither and thither by every wind of doctrine."

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, December 6, 1894.

Dr. R. H. HAMILL in the Chair.

Paper by Dr. DUNN. (See page 1.)

Paper by Dr. WILSON. (See page 8.)

Paper by Dr. DAVIS. (See page 13.)

Paper by Dr. NOBLE. (See page 18.)

Paper by Dr. BALDY. (See page 25.)

Paper by Dr. NORRIS. (See page 30.)

Paper by Dr. HIRST. (See page 36.)

DISCUSSION.

Dr. GRANDIN, of New York: It seems to me that to-day the subject of puerperal septicæmia may be definitely simplified by the statement that the disease is due to lack of cleanliness on the part of some one of the attendants on the parturient female. When we are unfortunate enough to witness the development of the affection in a woman whom we have confined it is of course a most comforting thought that we may not be at fault, that our nurse may not be at fault, that our assistants are not to be blamed, but the time has come when we are no longer entitled to hide ourselves behind Nature's cloak, for we must admit that aseptic technique on the part of all who come in contact with the puerpera means afebrile and uncomplicated convalescence. Auto-infection in the puerpera is a myth unless we are pleased to so denominate puerperal sapræmia. It

seems to me wiser, however, to consider the latter affection as something distinct from true puerperal septicæmia, since thus we are enabled to impress on our students and on the general practitioner the broad truth that sepsis of the puerperal tract is always brought to the woman by some one who has come in intimate contact with her. As a verification of the truth of this assertion I have only to point to the practical obliteration of septicæmia from the practices of all who pay stringent attention to the laws of surgical cleanliness, be it in private or in hospital practice. It has taken us years to reach this definite conclusion, but face it we must as a thoroughly established fact.

In my experience the vast majority of cases of puerperal sepsis originate in that portion of the genital tract which is accessible to local therapeusis. Hence the reason for insisting on careful repair of lesion immediately on the completion of the third stage of labor, in order to close the avenues of entrance of septic material, and hence the further reason for rigidly certifying to the cleansing of the utero-genital canal of remnants of placenta and of membrane before calling the third stage of labor completed surgically. If the process of child-bearing has been conducted aseptically and if the termination of labor has resulted in an empty uterus and in an intact genital canal, then puerperal septicæmia will not complicate convalescence unless the woman be septicized during the puerperal state.

I look upon puerperal cellulitis as a possibility although its occurrence is a rarity. I consider puerperal peritonitis as an epiphenomenon, in the vast majority of cases, of septic endometritis by direct connection through the Fallopian tube or through lymphatic extension. Usually, the occurrence of peritonitis is the sign of general septic infection and this is the reason why our therapeusis of this condition, no matter how radical, is very apt to prove abortive. The treatment of puerperal peritonitis may be said to consist in anticipating its development: that is to say, on the first sign of local sepsis our duty is to explore the genital tract which is accessible to local therapeusis, and to cleanse it after the most radical fashion. Every means must be utilized to prevent the extension of the septic process toward the peritonæum. Many a septic tube and a septic ovary may be saved, through early, radical, treatment of local sepsis of the lower genital tract. When, notwithstanding all our efforts, the tubes, the ovaries, the peritonæum become involved I am satisfied that equally prompt and radical measures are requisite toward saving the life which is greatly imperiled. If septic salpingo-oöphoritis and septic puerperal peritonitis are trifled with in indecision, general septicæmia with al-

most absolute fatal ending, ensues. If there be any treatment of these awful complications it is abdominal section and extirpation of tubes, ovaries and uterus, but this must be resorted to very early in the development of the complications if we would hope for ultimate good result as regards life. These views, I am well aware, are most radical ones, but if I have learned one lesson better than another through my obstetric experience it is that temporizing with these complications or attacking them in a half-hearted manner means one result and this is *death*. I have said above that our surgery in these conditions must not stop short of the removal of the infected tubes and ovaries, but must include the uterus as well, and I make this statement because I have become satisfied that septic salpingo-oophoritis in the puerperal state necessarily means septic metritis. If we are fortunate enough to reach these diseased organs before the peritoneal cavity is deeply affected, then our patient has a chance of recovery. If, however, the peritoneal cavity has become infected and is filled with multiple abscesses then we may as well frankly admit that our surgery will be unavailing. Against the deep general sepsis which is associated with general purulent puerperal peritonitis our remedial measures, whether medical or surgical, are futile. The best we can do is to extirpate tubes ovaries and uterus and then to open every pus accumulation in the peritoneal cavity—under the liver, under the spleen, around the kidneys, etc.—and establish multiple drainage in each of these localities. Unfortunately we can not thus or in any way eradicate the septic collections from the systemic veins and lymphatics, and therefore, as far as my experience extends, instances of this nature are bound to die, no matter how radical we aim at being.

The sum total of my argument, then, is that, in order to avoid the untoward complications I have briefly alluded to, we must recognize that they are all preventable, and that their occurrence is our fault or the fault of some one else who has been in attendance on the lying-in or the puerperal woman.

Dr. J. WHITBRIDGE WILLIAMS, of Baltimore : As some of you know, I have taken more or less interest in the question of puerperal infection particularly from an ætiological standpoint. During the past eighteen months my work has been unavoidably interrupted, but I expect to continue it, and hope soon to bring forth some material which may go toward solving the interesting problem as to the ætiology of puerperal sepsis.

As was said by the first speaker, puerperal sepsis is undoubtedly

due to a number of micro-organisms. The most frequent cause is the *streptococcus pyogenes*. That is the organism which causes puerperal infection in the vast majority of cases. Then there are cases caused by the *staphylococcus aureus* and possibly other forms. These cases are comparatively rare and are usually of moderate severity. Then we also have cases of gonococcus infection, nearly all of moderate severity. As far as I know none of these cases have died. We have other cases due to the colon bacillus. One Berlin observer found in seven cases a pure culture of the colon bacillus. Eisenhart and Krönig have also had to do with the colon bacillus. Several French observers have also met with it. There is no doubt that other organisms take part in the puerperal infection.

My own work has been conducted in rather a different line. I was interested in the work of Derelin on the vaginal secretions and undertook some work to see if my results would correspond with his. It is only necessary to say that my results did correspond very closely with his, and in my article, I had no hesitation in saying that his conclusions were absolutely justified. When in Leipsic last winter I found that Derelin's place had been taken by Krönig and Mermann. These two men have taken up the same line of work and have arrived at diametrically opposite conclusions.

Derelin divided his cases into those with a normal discharge, which constituted the majority and those with a pathological discharge. In a certain number of the latter, he found pathogenic streptococci and from this he stated that it was possible to have infection of the woman without the introduction of new organisms. My results confirmed those of Derelin. The two men who have followed him in Leipsic say that they can find no pathogenic organisms except the gonococcus. It is difficult to account for this difference in results. Derelin's work was conducted with care and I have watched the work of the other men and can detect no flaw. It may be that the material which they use is not suitable for the growth of streptococci. I hope, however, to have the opportunity of going over the subject again and seeing what the result will be. I believe, however, that my results show that in a certain number of women we can find in the vagina a certain number of pathogenic organisms as the streptococcus, staphylococcus and gonococcus. The question then is Do these things give rise to puerperal infection? This must be answered in the negative. The great majority of women will not have puerperal infection although many will have the organism present. Something else is required beyond the presence of the organism. We have the possibility

of infection but for practical purposes, it does not occur. When we do any operation we necessarily introduce many organisms, but we do not infect the wound. I think that while infection is theoretically possible and occasionally may occur in this way, yet that in the vast majority of cases when infection does occur, it has been brought from without by the physician or attendants. This view appears to be borne out by the results obtained in the best lying-in hospitals. Mermann who does not believe in auto-infection but in subjective antiseptics reports thirteen hundred cases. Only three per cent. of these had a temperature above 100°. He has lost no case from sepsis contracted in the hospital. Only one woman died and she had sepsis when admitted. I think that such results show that we practically have very little auto-infection.

When we come to the practical management of labor cases, I believe absolutely in subjective antiseptics. I do not believe in vaginal douches. The general practitioner is liable to do far more harm than good with them. In hospital practice however I do not think that we do our duty unless we differentiate the cases from a bacteriological standpoint and douche those cases with abnormal secretion. Where the secretion is pathological there may be a chance of auto-infection and those cases we should douche, but in private practice I condemn douching.

I should like to say a word in regard to the treatment of puerperal fever. I do not know that there is as much sapræmia as is generally believed, but I think that a considerable number of these cases are instances of mild septic infection. In such cases all that is necessary is to clean out the uterus and wash it out. I think that it makes no difference whether we use bichloride or carbolic-acid solution or simply boiled water, as the fluid acts mechanically and we can not use enough of the antiseptic to do any good unless we resort to continuous irrigation.

When we come to streptococcus infection where the germs have involved the wall of the uterus, after curettement the further use of the douche will do no good.

To sum up my view on the subject, I would say that I believe that auto-infection is possible but that we do not have to reckon with it. I believe in the most rigid subjective antiseptics but I do not believe in vaginal douches in general practice. In hospital practice where we differentiate our cases douching has its uses.

Adjourned.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE SOUTHERN SURGICAL AND
GYNÆCOLOGICAL ASSOCIATION.

Seventh Annual Meeting, held in Charleston, S. C., November 13, 14
and 15, 1894.

Dr. C. KOLLOCK, of Cheraw, *President*, in the Chair.

An address of welcome was delivered by the mayor of the city
and also one on behalf of the local profession by Dr. Brodie.

Abstract of a paper entitled

GONORRHŒA IN WOMEN.

BY J. B. S. HOLMES, M. D., ATLANTA, GA.

The author believed there was no disease that affects women that should engage the serious and thoughtful consideration of the physician more than gonorrhœa. So great an authority as Lawson Tait says: "Early in life I heard an eminent surgeon say that if he was doomed to have a venereal disease he would rather have syphilis than gonorrhœa. The author marveled and disbelieved, but now he knows that if he included women in his thoughts of the subject, he spoke truly. Syphilis is relatively a harmless disease. It may and does cause discomfort, distress and even pain, but he doubts if it ever kills the woman. Even if it does, where syphilis kills ten, gonorrhœa kills its thousands, and it would take the suffering of one hundred cases of syphilis to make up for the long, weary years of agony of one case of gonorrhœal pyosalpinx." Truly such a statement from a man of such broad learning and extensive experience as Mr. Tait must impress physicians with the great importance of the subject. "Modern gynecologists have unearthed the conclusion that it is a terrible and fatal scourge to women." The above language from Sinclair is strong, pointed and undoubtedly true.

Dr. Holmes has no doubt but that many of the chronic diseases of the ovaries and tubes that come under the observation of gynecologists are due to gonorrhœa. In the majority of cases the poor woman is entirely ignorant of the fact that she has or has ever had any specific disease. Indeed, her husband may say, if examined or questioned, that months or even years before his marriage he was a

subject of this disease, which was cured and has since shown no evidence of a return. Many of the higher authorities now seriously doubt whether gonorrhœa in the male is ever cured ; that the subject may be apparently well for months or even years, and under certain excesses, notably venereal, the urethritis, simple in character, as the patient suspects, for he knows he has taken no risks, returns, and the wife is promptly infected without any perceptible return of the disease in the husband. From such excesses the poison or gonococcus which has been latent for a long time, quietly resting in its bed, is aroused to fresh life and vigor to do its deadly work upon the innocent and unsuspecting woman.

Gonorrhœa in the female is not always easily diagnosticated, and doubtless many hundreds of cases are passed by competent and intelligent physicians as a simple vaginitis. It must be remembered that the gonococcus can not always be found in the gonorrhœal virus. On the other hand, the coccus is often said to be found in the troublesome vaginitis of children, where we know there has been no specific contact. Many of the cases of so-called puerperal fever are doubtless due to the rupture during labor of a pyosalpinx, most likely of gonorrhœal origin. One tube has remained patulous and healthy, while the other was the seat of an undetected pus sac. Rupture of these produce septic peritonitis, or so-called puerperal fever ; of course the presence of pus in the tubes is much more dangerous to the woman during pregnancy and labor than at any other time. Many cases of ruptured pus tubes have resulted in death to the poor woman, when the cause has been overlooked and perhaps attributed to other things.

So high an authority as Dr. Joseph Price, of Philadelphia, regards fibroids as caused, in many instances, by gonorrhœal inflammation of the uterus. Cystitis, sometimes of a severe character, the result of gonorrhœal inflammation, is occasionally met with.

In regard to treatment, the patient should be kept as quiet as possible and the diet made simple and plain. The bowels should be kept open, preferably by salines. Cleanse the vulva, and vagina thoroughly with soft cotton, and a solution of bichloride of mercury (1 to 1,000). Do not, under any circumstances, use, either for cleansing or applying remedies, vaginal douches, as there is too much risk, in this way, of carrying the disease into the uterus. After thoroughly cleansing, brush the affected parts thoroughly with carbolic acid and glycerin, equal parts, and then dry well and blow over all diseased surface a powder of iodoforn or sublimated gauze and cover the vulva

with a pad of the same. Repeat this daily ; or, if too much irritation should be produced from the application, then repeat only every second, third or fourth day, but cleanse the parts daily and apply the dry dressing. I have sometimes used instead of the carbolic acid and glycerin, nitrate of silver, one drachm to an ounce of water. Good results are also obtained by inserting daily, after the cleansing, a suppository of ten grains each of tannic acid and iodoform with cocoa butter, allowing this to remain twenty-four hours, when the parts are again cleansed and the suppository is again introduced. He, however, likes the dry treatment better. For the urethritis he uses a two-grain solution of nitrate of silver applied to the mucous membrane, with aseptic absorbent cotton wrapped on an applicator, once a day. A pencil of two to four grains of iodoform prepared with cocoa butter inserted into the urethra is an excellent application. Weak injections daily into the urethra of sulpho-carbolate of zinc, five grains to an ounce of water, is also an excellent remedy. Keeping the urine alkaline and diluted as much as possible by securing a free flow, which the author has generally been able to get by having his patient drink freely of Bowden lithia water. In cases of cystitis, he has also advised the free use of this water and has given ten grains of benzoate of soda with a capsule of three to five drops of Venice turpentine, four or five times daily, having the bladder washed once a day with a warm boric-acid solution, four to eight grains to the ounce of water. The warts can usually be relieved by dusting them freely with a powder of calomel and starch, one to four, and should this not prove effective, clip them off with the scissors and touch their base with pure carbolic acid. If the endometritis is seen before the tubes become involved, the author would, after a most thorough cleansing of the vagina, dilate and curette the uterus, wash it thoroughly with a bichloride solution (1 to 2,000), brush the endometrium with pure carbolic acid and pack lightly with iodoform gauze. If the tubes, ovaries and pelvic pritonæum should be inflamed, he would purge the patient freely with salines, giving chlorate and citrate of potash with quinine freely.

If the temperature should be excessive, the patient restless and nervous, the author would use phenacetine as a sedative, avoiding opiates of every character. If the peritonitis did not yield to this treatment, he would unhesitatingly open the abdomen, and irrigate with gallons of sterilized water, then drain, using the glass tube for this purpose. Locally he would apply glycerin and boric-acid tampons in the vagina and use hot-water rectal and vaginal douches. Poultices and blisters are of no value, but where the temperature is

high he would use the ice coil over the abdomen. If pus should form in the tubes, there is but one remedy—removal by abdominal section. It is worse than foolish to attempt to drain them by gauze in the uterus. It can not be done, nor can the author understand how this line of treatment can be advocated. The author can conceive of nothing more dangerous than curetting the uterus in the presence of immense pus tubes with pelvic adhesions. The drawing down of the organ necessary for curettage may break up pelvic adhesions and pour out the contents of pus sacs into the peritoneal cavity, which would result in the majority of cases in death to the patient. If her life is saved at all, it will only be done by a prompt abdominal section, with thorough irrigation and drainage of the abdomen. Then why not, in the first instance, when pus is detected, promptly remove it by surgical procedure. We then treat the woman rationally, and give her the very best and only chance of relief and restoration to health.

DISCUSSION.

Dr. GEORGE J. ENGELMANN, of St. Louis, Mo., called attention to the importance of differentiating between latent or chronic gonorrhœa and the acute form of the disease. He does not look upon acute gonorrhœa as a dangerous disease in women, but he does the latent or chronic form. He has not seen serious results from the acute form, but it is the infection which is not observed from a supposedly cured gonorrhœa in the male which produces the suffering in women.

Dr. BEDFORD BROWN, of Alexandria, Va., took exception to the statement made by Dr. Engelmann in regard to the non-danger of acute gonorrhœa in females, and cited the case of a woman in whom acute gonorrhœa ran its course, finally terminating in a fatal nephritis. In this case there was first urethritis, then cystitis, ureteritis, pyelitis, and finally nephritis.

Dr. RICHARD DOUGLAS, of Nashville, thought Dr. Engelmann had sounded the keynote, in that there is quite a difference in the infection from acute gonorrhœa and the latent form of the disease. Infection from the latter was a mixed infection, not only with the gonococcus, but with the streptococcus and staphylococcus, and this accounts somewhat for the virulence of the trouble. That gonorrhœa is the cause of uterine fibroids, he could scarcely accept, although he thought Dr. Price was the originator of that idea.

Dr. JOSEPH TABER JOHNSON, of Washington, D. C., said in the treatment of pus tubes the result of gonorrhœal infection, the very radical suggestion of Dr. Holmes was correct, namely, to resort to ab-

dominal section, as he was satisfied that gonorrhœal pus tubes were incurable by conservative measures. In addition to the removal of the pus tubes, if present on both sides, the uterus should be removed also because it is through the infected mucous membrane of the uterus that the tubes themselves have become infected.

Dr. WILLIAM PERRIN NICOLSON, of Atlanta, Ga., said the general surgeon was concerned in the treatment of gonorrhœa as well as the specialist. We are told that a urethra has been inflamed and subsequently restored to its normal condition, and yet years afterward the man transmits gonorrhœa to his wife. It is hard for him to accept such a doctrine. If a man goes for months and years with a gonorrhœa absolutely producing no effect whatever, if he is not well, how are we to tell him that he is not? We are told by the essayist that gonorrhœa is contracted by the female when there is absolutely no evidence whatever of disturbance in the urethra of the male, and that there is no trouble by which he can propagate disease.

Dr. A. M. CARTLEDGE, of Louisville, thought the essayist failed to differentiate between cases of subacute and chronic salpingitis and the cases of acute infection from gonorrhœa. He threw out the suggestion that physicians were not fully conscious of the great prevalence of artificial abortions in young married women of the better as well as lower class, and he believes that in these cases of secondary infection from pathogenic organisms we have a more fertile source for the development of tubular and ovarian disease than from gonorrhœa.

Dr. W. E. B. DAVIS, of Birmingham, Ala., considered the disease a dangerous one. The views of Tait, however, in regard to gonorrhœa were extreme. We have a frequent cause of tubal disease in the puerperal state, in delivery at term or in premature deliveries, frequently in artificial abortions, brought about by mechanical means. More or less infection occurs after all cases of abortion, but if the patient is in good condition at the time she will not be materially affected. If we have a soil that is favorable for the development of septic germs we will get a severe inflammation—a mixed infection.

Dr. W. D. HAGGARD, of Nashville, desired to place himself on record as opposed to the removal of the uterus and tubes for pyosalpinx as the result of gonorrhœa, believing that by dilatation and judicious curetting patients can be relieved of an endometritis produced by gonorrhœa.

Dr. JOHN D. S. DAVIS, of Birmingham, Ala., emphasized the importance of using the microscope in connection with gonorrhœa and carefully examining the pus. Experience has demonstrated that the

latent effects of gonorrhœa were not always directly due to the gonococcus *per se*, but to a mixed infection ; that is, we have an inflammation as a result of the gonococcus, which is fired up by another infection from the streptococcus. When we have a mixed infection, we have as a result pus tubes, suppurative peritonitis, and finally death of the patient if surgical interference is not resorted to.

Dr. HUNTER MCGUIRE, of Richmond, Va., entered a protest against the doctrine that a man can have gonorrhœa and not get well. As for the idea that a man who has had the disease should not get married, it is preposterous. He has seen thousands of cases get well and remain so.

Dr. HOLMES, in closing, said he was aware that many cases of acute gonorrhœa resulted in no secondary trouble, because they were recognized early and cured by judicious treatment. He wished to be understood as not indorsing the views of Mr. Tait, that gonorrhœa in the male was never cured, but he insisted that general practitioners were often too careless in advising patients to get married that had been the subjects of gonorrhœa.

Abstract of a paper entitled

OPERATION FOR COMPLETE PERINEAL LACERATION.

BY JOSEPH PRICE, M. D., PHILADELPHIA.

Many men who essay to be authorities on the surgical diseases of the major order, have no conception whatever of injuries of the perinæum and cervix so far as their intelligent repair is concerned. Indeed, there are many with a large obstetrical practice who labor under the delusion that they have never ruptured a perinæum, and that all their patients have entirely normal perinæa. This misconception is due to improper teaching more than to any other cause. When we consider that many of the prominent teachers of obstetrics do not hesitate to maintain that with this or that manipulation, a perinæum need never be ruptured, leaving out of sight altogether the fact that no procedure affords absolute security against rupture, we are not surprised that errors of belief are so common and pernicious. Perineal lacerations, unless extending through the skin to or through the sphincter, may escape detection unless by thorough digital examination. It is a serious error to start with the idea that a perineal tear does not exist, unless that external part be lacerated, to which the name perinæum is commonly applied. We are directed in obstetrical directions to sup-

port the perinæum with the hand, or with a towel applied, so as to prevent a tear, while the truth of the matter is that tears that do the most injury often have occurred before there is any indication for support of the skin, or external covering of the perinæum. It must be remembered that the perinæum proper is made up of all the muscles composing the lower pelvic diaphragm, and that this pelvic diaphragm is anatomically the adjunct and coefficient of the upper or true diaphragm of the respiratory apparatus. This fact is of importance in estimating the significance of pelvic lacerations. The simple suggestion of this fact will be sufficient to indicate another, often forgotten, phase of the logic by which the repair of these lacerations is to be insisted upon. As a primary and fundamental feature for the due appreciation of every perineal tear, it is to be remembered that it begins on the inside, or, in other words, proceeds from above downward, from within outward, or in other words, it happens only as an accident of extreme rarity, that there is any important outside tear without a coexisting internal tear. And beside this fact, another one is to be placed, that there may be most serious internal laceration without any external manifestation, so far as the skin is concerned.

All these tears should be approached as distinct surgical lesions, to be repaired in the line of their anatomical destruction, and not as cosmetic operations, whose object is to obtain superficial appearances without regard to perfection and utility. Heaping up of tissue outside the lines of resistance and tension, or mere thickening of mucous membrane and skin does not make a true perinæum, neither does a set of outside sutures, however much they may draw the parts together, afford any anatomical counterpart of a perinæum. From this basis all the so-called outside flap-splitting operations for perineal tears are only puckering operations, bringing the parts within the sutures that have never been severed, and in many cases taking them out of their proper relations.

The instruments formerly suggested as the wherewithal for perineal repair, of which the Peaslee or Baker Brown needle may be taken as a type, should be relegated to sailmakers and cobblers. They have no place in the real, delicate, scientific surgery of the parts. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery.

The Emmet operation, as originally suggested and afterward modified by its distinguished deviser, is the foundation for all successful operations on the lacerated perinæum, either with or without sphincter tear. This, it is to be remembered, is always an inside operation.

Even in sphincter tears, two or three outside stitches are all that are necessary in a majority of cases. Its so-called modifications are extensions only of the original idea of Emmet, and are only original in the use of a greater denudation, with a consequent increase in the number of stitches.

Flap-splitting operations are really misleading superficial procedures. They attack tissues, not in the lines of their real rupture, and do not and can not go to the real origin of the tears. They do not afford an end-to-end adaptation of the torn muscle, but substitute for this a lateral apposition, simulating end-to-end restoration, which the author demonstrated. In closing, the essayist said the tears of perinæa are often unavoidable, but their restoration is always possible, and their neglect is criminal.

DISCUSSION.

Dr. JOSEPH TABER JOHNSON referred to the great frequency of perineal tears, where they have not been discovered at first by the obstetrician, and are allowed to go unrepaired for from fifteen to twenty years. In such cases, the great fault is not so much with the gynæcological operator as it is with the obstetrician. Some obstetricians had made the statement that they had been practicing obstetrics anywhere from fifteen to thirty years and had never seen a laceration of the perinæum. The trouble is that such men do not look for them, and fail to recognize them when they do look for them. These perineal lacerations are not, as a rule, through the perineal body, but consist simply of separation of the fascia, levator ani and transverse perinei muscles, while the skin inside and not outside is torn through.

Dr. W. L. ROBINSON, of Danville, Va., was glad that the subject of repair of the lacerated perinæum by plastic surgery had been brought to the attention of the Association by a man so competent to deal with it as Dr. Price. He agrees with Dr. Johnson that too many practitioners are prone to overlook immediate tears and not to resort to surgery for their repair immediately after labor. This point ought to be taught more in medical societies and practiced.

Dr. HUNTER MCGUIRE, of Richmond, said the operation that Mr. Tait had given us for repair of the lacerated perinæum was one for which he deserved great credit, in that it was so simple that the majority of practitioners could do it.

Dr. RUFUS B. HALL, of Cincinnati, first congratulated the essayist upon his able paper and the sound principles of the technique of the

Emmet operation. In his judgment, any man who is capable of making any operation in surgery, is competent to perform the Emmet operation. Surgeons should find out which is the better of the two, the Emmet or the flap-splitting operation, and then select the one which is. He had done the flap-splitting operation many times, and while the women on superficial examination apparently had perfect perinæa to the eye and were satisfied with the operation themselves, still the speaker himself was not and had abandoned the method some time since.

Dr. GEORGE J. ENGELMANN, of St. Louis, regretted not hearing the paper, but he gathered from what had been said that the essayist had no faith in the Tait operation; that the results of it are imperfect—at least in his own hands, and likewise in the hands of others, considering the operations he has seen. He would not say, however, that the results were imperfect in the hands of Mr. Tait himself. In the solid body which the surgeon should attempt to perform, he had used the Hegar operation with such modifications as each case demanded. Where it is necessary to repair the vagina and rectum thoroughly, as well as the perinæum, he thinks it can only be done by an operation such as that devised by Hegar or Emmet.

Dr. RICHARD DOUGLAS, of Nashville, said in those cases where we have relaxation of the fascia, we necessarily have subinvolution of the vagina, and these are the cases to which the Emmet operation is adapted; but the speaker asserts that he has secured perfectly satisfactory results by the Tait or flap-splitting operation.

Dr. GEORGE H. NOBLE, of Atlanta, favors the Emmet operation, and reported two interesting cases of laceration of the perinæum. As a suture material, he uses silver wire and is perfectly satisfied with it.

Dr. ERNEST S. LEWIS, of New Orleans, had performed the Emmet operation, so beautifully described by Dr. Price, a number of times, and considers it one of the best operations that has ever been proposed for the repair of the lacerated perinæum, particularly in those cases where we find in connection with the laceration subinvolution of the vagina. In cases of simple laceration, where the lower part of the vagina is not extensively relaxed, he has succeeded equally as well with the ordinary operations, which he thinks are more rapidly done and the patient is not subjected to prolonged anæsthesia. In operating, it should be remembered that the Emmet operation is tedious, but whenever this could be obviated by the performance of an operation which is attended with less difficulty, the speaker sees no reason why we should be restricted to this one alone. He has at

the present time, both in private and hospital practice, several cases on which he performed Emmet's operation.

Dr. A. M. CARTLEDGE, of Louisville, believes that the experience of every surgeon will bear him out in saying that a perinæorrhaphy is one of the most difficult plastic operations in surgery. He thought the drift of the discussion indicated it. He believes that few Americans have properly understood the Tait operation, and the operation could not be done by men, after simply reading a description of it, as Mr. Tait does it himself.

Dr. W. E. B. DAVIS, of Birmingham, Ala., said a good deal depended upon the skill of the operator and in understanding the operation that he does. The Martin operation accomplishes the same purpose as Emmet's, and the operation of Mr. Tait, if properly done, does likewise. He thought that Dr. Emmet's operation could not be excelled so far as results were concerned, but it takes a great deal of time to perform it. The other methods enable us to do good work in a much shorter time.

Dr. PRICE, in closing, dwelt upon each point that was brought out in the discussion, paying a high tribute to Dr. Emmet's genius and skill.

ACUTE PERITONITIS.

By RICHARD DOUGLAS, M. D., NASHVILLE. (See page 57.)

Abstract of a paper entitled

HISTORY OF VAGINAL EXTIRPATION OF THE UTERUS.

By GEORGE ENGELMANN, M. D., ST. LOUIS.

At the New Orleans meeting of the Association the author was deeply interested in vaginal hysterectomy, which he presumed was a comparatively new operation with very recent modifications, but Dr. Lewis, of that city, called his attention to an old French pamphlet, showing that the operation had been done in the '20's. Since then he had found it was done still earlier, precisely as it is done to-day, the operation having been developed step by step.

DISCUSSION.

Dr. LEWIS, of New Orleans, stated that the first vaginal hysterectomy was performed by Dr. Dabourg in the little town of Auteuil, France.

Abstract of a paper entitled

REMINISCENCES OF DR. J. MARION SIMS IN PARIS.

BY EDMOND SOUCHON, M. D., NEW ORLEANS.

In 1860, Dr. Souchon had just entered into the study of medicine in Paris, and was attached to the service of Prof. Velpeau. In the spring of the following year, he by accident met Dr. Sims who had come to Paris with a letter to Velpeau from Valentine Mott, of New York. At this time Dr. Sims knew nobody in Paris and could not speak a word of French, so that the meeting of young Souchon was a very great help to him in his intercourse with Velpeau and the other surgeons of the French capital. Sims' great object was to get a case on which to demonstrate the success of his operation for vesicovaginal fistula. Velpeau procured a case upon which Sims operated successfully before a large audience of students, doctors and professors in the operating theater of the old Charité.

The ovation Dr. Sims received was very great and gave him the start that made him the universal surgeon we all know him to have been. Wherever Dr. Sims traveled and located he had more calls than he could attend to. The doctor's success, however, was not without trying moments, for twice he met cases that came very near terminating disastrously from the effects of chloroform. But their final recovery only increased the admiration of all for Sims' fine qualities as a surgeon.

Dr. Souchon relates in his paper several instances of Dr. Sims' generosity, and gives a graphic account of the generous and sublime manner in which Dr. Sims came to his rescue in a trying moment of great distress.

Dr. Souchon's paper ends in words of highest praise, enthusiasm and love for the great and good man that Dr. Sims was.

Abstract of a paper entitled

A CASE OF CARCINOMA OF THE PARTURIENT UTERUS,
REMOVED THREE DAYS AFTER CONFINEMENT; RE-
COVERY.

BY GEORGE H. NOBLE, M. D., ATLANTA, GA.

[This paper, received too late for publication this month, will appear in the February number.]

SIMULTANEOUS APPEARANCE OF CANCER IN THE
BREAST AND UTERUS.

BY JAMES EVANS, M. D., FLORENCE, S. C.

(See page 68.)

*Abstract of a paper entitled*REPORT OF A CASE OF FIBROID TUMOR OF THE
UTERUS, WITH SUPPURATING OVARY DISCHARG-
ING PER RECTUM.

BY RUFUS B. HALL, M. D., CINCINNATI, OHIO.

As a preface to his report, Dr. Hall said, the subject of operative treatment for fibroid tumor of the uterus is one in which the keenest interest is manifested by men engaged in abdominal surgery. The main points in the technique of the operation have been practically settled, but certain minor details in operative procedure are capable of improvement. Complications occasionally arise which tax to the utmost the skill of the operator.

The following case was reported in detail as illustrating a number of these complications:

The patient, aged forty-four, was known to have a fibroid tumor for five years. She had suffered from sepsis for five weeks previous to the operation. In addition to the fibroid tumor was a large suppurating ovary holding about two pints of pus, which was discharged *per rectum* every eight or ten days. The suppurating ovary was densely adherent, and after its removal disclosed a large opening in the rectum. The operation included total extirpation of the fibroid uterus with the suppurating ovary, and repair of the intestinal rent. There was no leakage of the injured bowel after the operation. The patient recovered.

The doctor drew the following conclusions: The question of operation during sepsis is one that will admit of discussion both *pro* and *con*, but in the end it must be decided by the merits of the individual case and not by rule. Then as to technique; total extirpation was given the preference, as it "gives the ideal condition both theoretically and practically for after-treatment." The Baer method was condemned, as it does not give thorough drainage; a thing absolutely necessary where there are extensive raw surfaces which have been bathed in pus, and no peritonæum to close off the general

peritoneal cavity. To repair the bowel injury where a resection or Murphy button are out of the question, the strengthening of the suture line with a tag of adventitious tissue was advised. The packing of the pelvis with gauze to protect the cavity from intestinal leakage, should any occur, and to prevent intestinal adhesions, was recommended. The gauze is usually removed on the fourth day, and peroxide of hydrogen used as a wash for the cavity several times daily.

Again, forcible dilatation of the sphincter ani muscle to cause incontinence, thus relieving the intra-intestinal pressure from accumulating gases, the doctor says, adds greatly to the chances for recovery. He first employed it for this purpose on February 6, 1893, in an operation for extra-uterine pregnancy with extensive bowel injury, the patient recovering. He says: "So far as I know, I am the first man to practice forcible dilatation for this purpose."

Abstract of a paper entitled

SOME COMPLICATED CASES OF PELVIC SURGERY.

BY J. G. EARNEST, M. D., ATLANTA, GA.

CASE I.—A married woman, of thirty-seven years, the mother of two children, was admitted to the Grady Hospital August 31, 1894. Pelvis was filled by a hard mass supposed to be a fibro-cyst of the ovary. When placed on the table, September 1st, for operation, her temperature was 102.5°, pulse 120, urine albuminous. Paralysis of the bladder with incontinence of urine. Upon opening the abdomen, the tumor was found to be a solid almost spherical mass, completely filling the pelvis and displacing the intestines. It was firmly adherent to the entire floor of the pelvis. After breaking up the adhesions with the fingers, the pedicle was tied and the mass cut away. The whole floor was bleeding freely with numerous spouting vessels. The tissue presented a livid appearance, was very friable, so that any attempt to catch up a vessel with forceps simply resulted in pinching off the tissue within the grasp.

The abdomen was very freely douched with hot water, with very slight effect upon the hæmorrhage. The water was then removed and hot sponges packed into the cavity for some minutes, which were in turn removed and the cavity quickly but firmly packed with iodoform gauze. A large glass drainage-tube was inserted, and the abdomen closed. The gauze was allowed to protrude from the lower angle of the wound.

Reacted promptly. Temperature on the following day 100° . Twenty-four hours after operation gauze removed. Forty-eight hours after operation drainage-tube was taken out. As the patient improved she gradually regained control of her bladder which had been paralyzed by pressure of tumor on the nerves supplying the base and neck. When she left the hospital four weeks after the operation, her condition in that respect was about normal.

The center of the tumor was found to be breaking down and contained several ounces of pus.

CASE II.—A widow of thirty-two, mother of two children. Suffered since birth of last child six years ago with severe attacks of colic. Action of the bowels always painful. A cyst apparently about the size of a medium cocoanut occupied the left side of the pelvis. March 30, 1893, operated at Grady Hospital. Temperature 100° , pulse 92. Ether. The omentum adherent to abdominal parietes and bladder. The small intestine was firmly attached to the tumor at several points. Cyst very firmly attached to floor of pelvis and side of abdomen. Ruptured in attempt to dislodge it. After very tedious work one coil of intestine was freed from the cyst. The others seemed even more firm and it was therefore thought best to make no further attempt at loosening them or to remove the cyst. The cyst was carefully torn open with the fingers and washed out with very hot water. Glass drainage-tube left in twenty-four hours. Recovery uneventful. The remains of cyst can no longer be felt, and the colicky pains have disappeared. *

CASE III.—An unmarried woman aged nineteen was admitted to Grady Hospital August 24th. She had temperature of 101° and complained of pain in pelvis and great tenderness of abdomen and inability to stand on her feet on account of pain. A cyst on her left side easily made out. August 27th the abdomen was opened and very numerous and dense adhesions encountered. Ovarian cyst left side size of a quart cup, dipping down to the bottom of pelvis firmly fixed. Over this was a mass consisting of omentum and some coils of small intestine intimately blending and firmly adherent to tumor. The walls of the tumor were rather thick, but quite friable, and in the attempt to tear it loose from the bottom of the pelvis it was opened; some dirty semitransparent fluid escaped of decidedly foetid odor. Any attempt to loosen the adherent intestines and omentum resulted in free hæmorrhage, and was necessarily attended with so much force as to seriously endanger the intestine. The attempt was reluctantly abandoned. The rent in the cyst was enlarged with the

fingers until the cyst was laid wide open. It was found to contain in addition to the semitransparent fluid before alluded to, some clots of blood somewhat altered in appearance and very offensive.

It was thoroughly emptied and washed out with hot water. The interior of the tumor was carefully scraped with the finger nail and thoroughly washed and rewashed and scrubbed with a sponge on a long holder. The margins of the rent were examined for bleeding vessels.

As none were found a large glass drainage-tube was introduced to the bottom of the cyst and the abdomen closed. Tube removed twelve hours after the operation. Recovery uninterrupted. When she left the hospital a month after the operation, she claimed to be perfectly well and free from pain.

These two last cases are not introduced as great rarities but simply to illustrate a method of treatment that under certain circumstances is safer for the patient and just as apt to give relief of symptoms as total extirpation of the tumor, also to emphasize a growing conviction that he has, that intestinal adhesions are frequently tinkered with when it would be best to let them alone. He is no advocate of timid or imperfect surgery, but in cases like the above where the tumor can be effectually dealt with without disturbing old, thoroughly organized adhesions, that the history and condition of the patient clearly show to be harmless, and in view of the fact that if those adhesions are loosened they will almost certainly anchor at some other point where they may be a source of constant annoyance or even produce a fatal obstruction of the bowel, he believes it best to leave them undisturbed.

Abstract of a paper entitled

THE REMOVAL OF AN INTRA-UTERINE FIBROID TUMOR
BY MORCELLEMENT, WITHOUT HÆMORRHAGE.

BY HERBERT M. NASH, M. D., NORFOLK, VA.

In September, 1892, he saw in consultation Mrs. A., aged about forty-two years, the subject of intractable hæmorrhages from the uterus, lasting two to three weeks of each month, and which had been habitual for several years.

The uterus could be plainly felt above the pubes, and by the conjoined method, sound, etc., the diagnosis of intra-uterine fibroid was made. Not wishing at that time any radical procedure, she continued under the care of her physician, whose best efforts to control hæmor-

rhage proved fruitless. On the 11th of July, 1893, she came into hospital for surgical treatment. The uterus now reached to within two and a half inches of the umbilicus, and she was too anæmic and prostrated for immediate operation. In order to arrest the bleeding and thus improve her strength, the uterus was carefully packed every alternate date with iodoform gauze, the indirect course of the canal and the uterine cavity, rendering the first attempt very difficult. The effect of the first packing was encouraging, and it was regularly repeated as above stated, the colored discharge becoming less daily, until it finally ceased, and a liberal diet being allowed, the patient rapidly gained in strength, notwithstanding the somewhat painful uterine tenesmus set up by the packing.

On the 26th of August he proceeded to operate under ether. It was found quite impossible to dilate the os to the extent desired, but there was room enough for manipulation without dividing the cervix, and no difficulty was found in seizing the presenting mass (the attachment of which to the uterine walls had been made out to be sessile) with a strong volsella. Upon making traction with some force, in order to determine the best method of procedure, the tissue gave way and the withdrawn part of the detached mass was quite large, but no bleeding followed. This fact led the doctor to proceed by morcellation, and with the forceps, scissors, and instrument which he exhibited, the whole growth was removed piecemeal, and with only a slightly colored serous discharge.

The previous packing had been so effectual that the growth itself and the uterine walls appeared to have been exsanguinated. The fragments removed, when under strong compression, presented a mass of fibroid tissue nearly as large as an ordinary cocoanut. When the patient left the hospital, the uterus had contracted firmly and measured a fraction over three and a half inches in depth, occupied its proper position in the pelvis, and she herself has remained to this date entirely well with perfectly normal functions.

The following officers were elected for the ensuing year :

President—Dr. Louis McLane Tiffany, of Baltimore, Md.

First Vice-President—Dr. Ernest S. Lewis, of New Orleans, La.

Second Vice-President—Dr. Manning Simons, of Charleston, S. C.

Treasurer—Dr. Richard Douglas, of Nashville, Tenn.

Secretary—Dr. W. E. B. Davis, of Birmingham, Ala.

After introducing and adopting resolutions of thanks, the Association adjourned to meet in the city of Washington, D. C., the second Tuesday in November, 1895.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

September 21, 1894.

EDITED BY TRUMBULL W. CLEAVELAND, M. D.

SYMPHYSIOTOMY.

BY M. L. HARRIS, M. D., CHICAGO, ILL.

Recent statistics¹ show the general average mortality of symphysiotomy from 1887 to 1893 to be from 10.7 to 12.3 per cent. Selected cases in the hands of a few operators show, of course, a much lower rate. From a surgical standpoint the mortality is greatly in excess of what should be expected from such an operation. As pregnancy does not materially increase the risk of surgical interference, we are forced to seek some faulty technique in the operation to account for this high rate of mortality.

Operators differ in opinion as to the facility of the operation, and even individual views are altered by extended experience.

Thus Hirst² in 1892 said: "Suffice it to say the operation is easy and simple. It can be performed by any one who has a little experience in surgery and has learned the principles of asepsis. The field of Cæsarean section must also be very materially limited by our knowledge of symphysiotomy." A year or so later,³ in comparing symphysiotomy with Cæsarean section, he says: "If I may be permitted to judge I should regard the latter (*i. e.*, Cæsarean section) as decidedly the easier operation. The after-treatment of Cæsarean section in a favorable case is much easier for patient, physician, and nurse. It is obvious, therefore, that symphysiotomy can be preferred to Cæsarean section on one ground alone—that it is less dangerous to the mother."

The author considers that a review of the reported cases shows a failure on the part of the operators to appreciate the particular anatomical relations of the structures involved; and calls special attention to certain anatomical points—namely, "that the sheath of the rectus, at about one third of the distance from the umbilicus to the pubes, passes entirely in front of the muscles, forming posteriorly the arc of Douglas. Below this arc the transversalis fascia divides into

two layers, the anterior of which passes down behind the rectus to the symphysis, while the posterior passes over the bladder. The cellular space between these two layers is the so-called *cavum Retzii*, or pre-vesical space, and extends laterally nearly to the epigastric arteries. Below the symphysis the anterior layer, which here becomes the posterior portion of the so-called triangular ligament, passes over the urethra to the base of the bladder, being thrown laterally into folds which are called the pubo-vesical ligaments. This prevesical space is of importance, owing to the facility with which it may become dissected up and filled with blood-clots in case of hæmorrhage. Below the symphysis, extending between and being attached to the rami of the pubes, is a firm fibrous fascia, the deep layer of the deep perineal fascia. This is a most important structure to the symphysiotomist. It surrounds part of the corpora cavernosa clitoridis, is perforated by the vagina, urethra, and dorsal vein of the clitoris, and contains between its layers the erectile tissue about the vagina and urethra, the major portion of the urethra, and a plexus of veins around the neck of the bladder. Ascending along the inner border of the ramus is the internal pudic artery, which at times is quite large. During pregnancy all these parts are much increased in vascularity. The bones of the symphysis are more widely separated anteriorly than posteriorly, consequently the joint is more easily opened from the front than from behind. The ligamentum arcuatum, or inferior pubic ligament, extends a considerable distance to either side of the mid-line and is thick, thus rounding off the apex of the arch.

“The great importance of the deep layer of the deep perineal fascia will be readily understood when it is shown that the divided symphysis can not be separated to any great distance without putting the fibers of this layer on the stretch transversely, and if the separation be continued beyond this point the fascia must rupture. The tearing will occur at its weakest part, which is usually along the line of perforations, and will thus involve the structures which pass through this fascia, to wit, the large veins, clitoris, urethra, and finally the vagina. It is the tearing of these structures which leads to most of the dangers and complications of the operation—hæmorrhage, sepsis, urinary fistula, incontinence of urine, etc. The first of these, hæmorrhage, is very common, often alarming, and at times even fatal, as the case of Treub⁴ illustrates.”

The author's first experience with symphysiotomy on a living subject was while assisting Dr. Banga.

After an incision had been made through the symphysis from be-

fore backward, the attendants were instructed to separate the thighs; immediately there was a tearing of the soft parts, followed by a profuse hæmorrhage, which poured from all points without spurting. Mass ligatures, clamps, tampons with counter pressure at last controlled it. The urethra was lacerated, forming a urinary fistula, which was subsequently closed. The patient made a good recovery and possessed a living child.

Severe hæmorrhages of this kind have been met with by many operators, and are due to the cutting or tearing of the venous plexus about the neck of the bladder, or the erectile tissue and cavernous bodies of the urethra and clitoris where they pass through the deep fascia. The hæmorrhage is difficult to control, because, as Schwartz⁵ says, the veins are held open by the stretched intervening fibers of the deep fascia. Zweifel⁶ reports a case where the hæmorrhage was so severe that it was controlled with great difficulty. Similar cases are reported by Braun,⁷ Varnier,⁸ Törngren,⁹ Longaker,¹⁰ Edgar,¹¹ Schauta,¹² Olshausen,¹³ Leopold,¹⁴ Flatau,¹⁵ Budin,¹⁶ Burkhardt,¹⁷ and others.

Tellier¹⁸ reports a case where hæmorrhages came from an artery as large as the radial, along the descending ramus of the pubes. Both ligating and tamponing failed, and the thermo-cautery alone controlled the bleeding, but not until a litre of blood had been lost, the patient subsequently dying from anæmia in spite of transfusion. As these hæmorrhages are usually venous, proceeding from torn plexuses and cavernous tissue, ligatures are useless. It is best controlled by relaxing the tense fibers of the torn fascia, which, while tense, hold open the bleeding veins. This is done by pressing the thighs together and packing the space with gauze. Failing in this, acupressure must be tried by passing long needles around the bleeding surface, and exerting counter pressure from the vagina.

The author suggests the following method of operating: The incision leading down to the symphysis should be free, commencing about four centimetres above the upper edge of the bone and terminating about one centimetre above the clitoris. It should not be carried to either side of the clitoris, as has been recommended and tried at times, as there is danger of wounding the clitoris, as has been reported by Toujan,¹⁹ and because it brings the lower end of the incision too near the vaginal opening, thus increasing the danger of infection. When the bone is reached the finger should be introduced posteriorly between the recti muscles into the cavum Retzii, where the bladder and peritonæum, should the latter descend so low, should be separated

thoroughly from the entire posterior surface of the symphysis well down to the arch. As the bones are more widely separated in the front, it will be found easier to open the joint from before backward with an ordinary scalpel; the finger introduced posteriorly prevents any possible injury to neighboring structures. While cutting the symphysis the thighs should be firmly held together by assistants, thus guarding against the accidental, sudden rupture of the joint by a pain crowding the head down, as occurred to Krassowsky.²¹ He was cutting the symphysis from before backward and from above downward. When this was about one third accomplished a strong pain came on, which was followed by a loud cracking and the joint separated three centimetres. There immediately occurred a severe hæmorrhage from the depth of the wound. The anterior wall of the vagina was torn and cystitis with incontinence of urine followed. The same accident occurred to Smyly.²¹ He says: "The edge of the knife had scarcely touched the cartilage when the bones sprang apart, tearing the soft parts beneath, including the urethra."

The symphysis should be completely divided, for when partly divided, insufficient room is gained and the symphysis is weakened so that efforts at delivery may cause sudden rupture and injury to the soft parts. This occurred to Kascharoff²² and Ekstein.²³

When the symphysis has been completely divided the ends of the bones are separated but little, being still held together by the ligamentum arcuatum and the deep perineal fascia, or so-called triangular ligament. These structures should now be carefully separated from the arch of the pubes by a blunt-pointed bistoury under guidance of the finger, closely hugging the bone on each side (the thigh being held closely together). As fast as the tense fibers are divided from the arch it will be seen that the space at the symphysis gradually widens. When the fibers of the deep fascia are no longer felt tense it will be found that the symphysis has separated as widely as it can without straining the sacro-iliac joints. The separation will usually amount to from five to seven centimetres. This I consider the most important step of the operation, and if the ligament and fascia be carefully detached laterally from the bone all danger of hæmorrhage and laceration of the soft parts will be effectually avoided.

In all cases the symphysis should be separated to its full extent before attempting delivery. If this be not done it is liable to suddenly spread on account of the descent of the head, thus lacerating the urethra and vagina and giving rise to severe hæmorrhage.

Laceration of the soft parts is an important factor leading to sep-

sis, the infection coming from a torn urethra or vagina. The lacerated veins and cavernous tissue increase the danger of pyæmia.

In Burkhardt's case, where both corpora cavernosa clitoridis were torn, a double thrombo-phlebitis of the saphenous veins followed. In von Dittel's case, in which there was laceration of the clitoris, urethra, and vagina, death occurred on the second day from anæmia and septicæmia. The tissues about the symphysis were œdematous, swollen, and purulent. In one of Braun's cases, where there had been severe hæmorrhage, death occurred on the sixth day from peritonitis. The autopsy revealed lobular pneumonia in the right lung, perforative ulcer of the stomach, and the cartilages of the symphysis were discolored and covered with pus. The interior of the uterus and the broad ligaments were normal. The connective-tissue phlegmon in the pelvis came from the infected symphysis. In Pinard's²⁴ case, which died from sepsis on the ninth day, a large, partly softened blood-clot was found behind the symphysis, extending from one epigastric artery to the other.

Among the sequelæ of laceration of the soft parts are—(1) Incontinence of urine arising from injury to the muscular wall of the urethra; this is often only temporary, but may be permanent. (2) Urinary fistulæ following rupture of the urethra. (3) Vaginal prolapse resulting from injury to the triangular ligament.

After-treatment.—The paper condemns the suturing of the bones, recommended by most Germans, as unnecessary and liable to induce necrosis.

The external wound should be sutured, a strip of iodoform gauze being carried just posterior to the symphysis and brought out at the lower angle of the wound. This should be removed at the end of twenty-four or forty-eight hours. The bones should be approximated by pressure, and the pelvis encircled with a broad rubber adhesive bandage. The patient should maintain the recumbent posture for at least four weeks.

After giving a detailed account of two successful cases operated on by the author according to the method already described, he draws the following conclusions:

1. The great importance of the deep layers of the deep perineal fascia.
2. The method of detaching it from the arch of the pubes to prevent laceration of the soft parts when the bones separate.
3. The complete division and separation of the symphysis in all cases before attempting the extraction of the child.

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DISCUSSION.

Dr. F. A. STAHL: I congratulate Dr. Harris on the success he has had in his operations. The measurements are what we should have in mind in considering such a serious operation as symphysiotomy. Dr. Jaggard has already called attention to the apparent normal pelvic measurements of the patient exhibited by Dr. Harris. After cursory external examination I am of the opinion that this pelvis is normal. The conditions which have arisen subsequent to the operation may have changed the preoperative measurements. We may encounter a pelvis which viewed externally seems normal, but upon internal examination the promontory of the sacrum may be found to be so pronounced as to cause a serious narrowing of the canal. This may be due to the traumatism, curvature of the spine, tuberculosis, or rhachitis. Of course in multiparæ you may have a history of previous dystocia. These conditions did not exist in the case under consideration. I am not inclined to alter my opinion, expressed in the discussion of Dr. Sandberg's paper, because of the patient or the statistics presented tonight. I would ask why version was not attempted. I had a case a few weeks ago in which the pelvic diameters were generally shortened

and disproportionate to those of the child's head. In this patient's first labor the child was born asphyxiated and died. In the second labor she had twins, one of which is still living. Her third, fourth, and fifth labors were spontaneous deliveries with living children. In the sixth labor the physician applied forceps, but could not move the head; he then turned and delivered a dead child. I attended her in her seventh labor. Her history led me to believe that there might be some trouble with the pelvic diameters. On examination I found that the promontory of the sacrum projected to such an extent that there was a conjugated vera of three and one eighth inches = eight centimetres. As both the patient and her husband were well developed, I expected a well-developed child. When I was called she was already twenty hours in labor. The cervix was dilated, the head above the superior strait. In cases where the head is above the brim of the pelvis I prefer not to use the forceps. I turned the child and encountered no special difficulty until I attempted to deliver the after-coming head, which became fixed above the brim. To save the child I introduced my finger high up in the vagina and above the brim, and succeeded in drawing down the inferior maxilla, thus permitting the child to breathe, while the head was still high up in the entrance. With my finger in the mouth I could appreciate several respiratory attempts and heard the vagitus uterinus. After decided pressure from above, with assistance from the hand introduced below, the head was soon delivered. The child was born in the second degree of asphyxiation, but was soon restored and is to-day in excellent condition. Was a symphysiotomy indicated in this case? Great stress should not be laid upon a centimetre, but rather upon the condition and powers of the parturient and her tissues, as also those of the child. We should not overlook the favorable influences that cause adaptation of the foetal head to the parturient canal. In patients with contracted pelvis this fatal adaptation and indentation often occurs.

Dr. H. P. NEWMAN: I was very much interested in the paper and I think the description of the deep fascia and its separation will be valuable, and I hope the technique given by Dr. Harris will do away with the hæmorrhage which is sometimes appalling. Excessive separation of the symphysis ought to be controlled by bandaging previous to opening the joint, which can be accomplished by surrounding the pelvic bone with a roller bandage, which will prevent abrupt separation at the time the division is complete. In my maiden operation I did not appreciate the importance of hæmorrhage and rupture of the soft parts, or, at least, this method of preventing it, but I did take the

precaution to bandage the pelvis, and yet I got some hæmorrhage which was readily checked and no bad results followed. I think a comparison of symphysiotomy with some other obstetric operations is worthy of mention, and particularly with higher forceps delivery, which is presumably now done many times. We hear in the reports of obstetrical work of the great force used with forceps to deliver the child's head. This I consider an unjustifiable and barbarous procedure. I would certainly employ symphysiotomy in preference to the use of forceps to deliver a child's head through the pelvis, particularly when it is above the superior strait of the pelvis. The injury that may result from forcible use of forceps may not prove fatal, but will be permanent. Statistics based on the recovery of the mother and life of the child are very misleading. They do not take into consideration the injury that results from traumatism to the cervix and pelvic muscles and fascia, and the protracted convalescence or chronic invalidism that supervenes. Cases where so much force has to be used to deliver are an indication for some other procedure. The usual method employed is version or adapting the child's head to the pelvis; but where this can not be accomplished, through the faulty relation of the child's head to the pelvis, symphysiotomy I believe is justifiable, because the technique is such that we know what we are doing and we can prevent the bad result that I have mentioned.

Dr. M. L. HARRIS, in closing the discussion said: The criticisms regarding the indications for the operation were fully anticipated and appreciated. I agree as to the difficulty of measuring a pelvis. If there is any one who does not appreciate this it will only be necessary for him to read a few of the German authors and to notice the difference in their measurements of the pelvis before and after death, or to view some of the complicated machines the Germans have devised for measuring the pelvis, to be convinced. If these machines are necessary we would need a specialist who would do nothing but measure pelvises. In the paper all the measurements, except those that could be made externally, were given as estimates or approximate measurements. I recognize perfectly that these measurements were not accurate. I also recognize in the reports of these cases the extremely small value of any and all external measurements. So far as determining the necessity or advisability of doing symphysiotomy or any other operation, they are absolutely valueless when considered alone. There are deformities of the pelvis, other than flattening or obliquity, which the external measurements can not determine. I would refer any one who would like to look over the subject in this connection to

Neugebauer's article on exostosis and prominent promontories where it is absolutely impossible to bring the child's head through the pelvis, without any indication whatever from external measurements. There are two elements to be considered in a case of labor—the pelvis and the child's head. With a pelvis which measures eight centimetres and a head that will pass through it, there is no indication for operation. I do not make a specialty of obstetrics and am willing to be criticised, but obstetricians will discuss and argue for hours, in articles of immense length, whether symphysiotomy shall be done in a pelvis which measures sixty-seven or sixty-five millimetres—a difference which no man can determine by any measurement, internal or external. It is all useless argument. The plain, practical question is, Will this head go through this pelvis? I do not care whether you determine it with your finger or with an instrument. In the first case, which was Dr. Banga's, I had nothing to do with examining the patient or making the measurements; but the patient had had four previous labors, in which it had been impossible to deliver of a living child, and in two of these labors craniotomy was done. This history is presumptive evidence, at least, that in the fifth labor symphysiotomy was indicated. In the second case the patient had been in labor from Sunday night until Tuesday morning, when I was called. The os was completely dilated; the head lay above the pelvis, not engaged in the least. The two physicians in attendance had used forceps, but were unable by their combined efforts to engage the head, which lay resting on the promontory and symphysis in a transverse diameter. I tried to deliver with the forceps myself. I carefully examined the head, and the pelvis in all its dimensions, with the hand introduced into the vagina, and I examined the head bimanually, and am of the opinion that that head could not have gone through that pelvis. Consequently, to terminate this woman's labor I deemed symphysiotomy the best operation to have both child and mother, and the result is evident. Dr. Jaggard alluded to the looseness of the scientific statements, but, as I said before, it was impossible to be accurate in the measurements of the pelvis, and as that is only one element, the head being as much of an element as the pelvis, the only practical and scientific estimate to be made is whether this head will go through this pelvis, regardless of whether the diameter is six, ten, or eleven centimetres. The cases operated upon will show that in eighteen or twenty per cent. the conjugata vera measured over eight centimetres. Regarding the question about the application of the forceps, I will state that they were applied in both the cases above the brim of the pelvis.

Combined Uterine Dilator, Tissue Forceps, and Tampon Carrier.

Dr. NEWMAN: This instrument is one which I devised two or three years ago for dilating the cervical canal in cases of stenosis where the larger instruments were impracticable. It is serviceable as tissue forceps, and particularly useful in tamponing the uterus, and I have found the adjustment of its curves nicely adapted to intracervical and uterine work.

Having the mouse-tooth bite, a very accurate coaptation of its blades is insured. Where applications of iodine, iodized phenol, and the like are made to the non-puerperal uterus, their astringent action often constricts the canal or stimulates contraction at the internal os, making the subsequent introduction of the tampon very difficult.

This instrument obviates that difficulty by allowing you to dilate the canal each time before withdrawing the blades to carry in another portion of the gauze.

Exhibition of Specimen.

Dr. H. P. NEWMAN: This is a tumor which was removed from a maiden lady, thirty-six years of age, who had been uniformly healthy. Her menstruation, which first occurred at thirteen, was regular, but quite painful during the first day through her entire menstrual life.

The tumor is a fibroid with myxomatous degeneration of its entire inner portion. The interesting feature of the case is the fact that the patient never had any undue hæmorrhage, her principal distress arising from pressure. The growth is interesting from its uniformity of outline and its great resemblance to the pregnant uterus. It imparts a sensation of fluctuation, owing to the softness and degeneration of its structure, though it contains no cystic accumulations.

When the tumor was opened its uniformity, its smoothness, and its general outline indicated pregnancy. It pervades the entire matrix of the uterus, the development being in the anterior wall uniform throughout, and finally invading the fundus and the posterior and lateral walls. The cavity of the uterus is not materially enlarged. Evidently at one period in the growth of the tumor the veins were externally large, and in the dense structure certain of them became strangulated, and varicose veins, which are rarely seen in growths of this kind, are seen all through this one.

The patient has had no rise in temperature since the operation,

and no increase of the heart's action, and has up to this time made a uniformly good recovery.

There were broad-ligament cysts running down both sides, which could not be entirely extirpated, consequently it was thought best to fix the pedicle in the abdominal wall and drain.

TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

October 11, 1894.

Case Report.

Dr. C. A. L. REED said this was a specimen, somewhat rare, from a case of true tubo-ovarian cyst, upon which he operated on the 4th inst. The woman came to him some time previously and after examination he concluded that he was dealing with a fibroid which was intraligamentous on the right side. This diagnosis was justified by external appearance. Tumefaction was marked on the right side, and the growth seemed to come off in the same manner as myomata grow from the side of the uterus into the broad ligament. The uterus was slightly mobile, its mobility corresponding to the mobility of the entire mass. Although the abdominal wall was covered with a thick layer of fat he outlined the tumor, which seemed to be solid and seemed to be a subperitoneal uterine myoma, as no hæmorrhage had occurred and the menses were only slightly increased. There were some kidney symptoms, and she also had some swelling of the right ligament. She was sterile after eight months of married life, and this fact, together with the pressure symptoms, induced him to advise the operation. The operation was begun with the above idea of the condition and that the appendages would be removed to check the growth. On opening the abdomen he found the mass was fluctuating, and it seemed to be a fibroid cyst of the uterus; but, upon further examination, he found a body looking like an intestine stretched over the upper surface of the tumor. The tumor was bound in the pelvis. He thought at first it was not ligamentary, but, by carefully dissecting the adhesions, the fact was revealed that it was a true ovarian cyst, and was bound down to everything in the iliac fossa, and the large circular, tubular body, a little purplish in color, was an enlarged

tube. This tube has been very carefully demonstrated by Dr. Bettman. On the inside of the cyst will be seen the opening of the tube, into which one may insert his finger.

It is a rather rare specimen, but we are all familiar with its pathology. We have primarily an ovarian cyst, which enlarges and divides the utero-tubal connections. Adhesions take place with the fimbriated extremity of the tube, and there is a consequent dilatation of the tube.

DISCUSSION.

Dr. A. W. JOHNSTONE: The case just reported by Dr. Reed is extremely interesting, and his description is exactly that of ovarian pregnancy. There was a case presented to the American Gynæcological Society, some time ago, similar to this one, except that there was a pregnancy. The tube was patent enough for the spermatozoa to find its way into it, and from the adhesions the pregnancy sac was formed. It is my belief that most ovarian pregnancies occur in that way.

Dr. EDWIN RICKETTS: What per cent. of ovarian pregnancies are found in the United States?

Dr. JOHNSTONE: Well, I have never seen a case that I was satisfied was an ovarian pregnancy. A case was presented to the American Gynæcological Society which was claimed to be an ovarian pregnancy, pure and simple, but which turned out to be an ordinary dermoid. The specimen was removed post-mortem, and had been kept in alcohol a year before the man got possession of it. I can see how it is possible for an ovarian pregnancy to occur, but I have not yet seen a case that I was satisfied was an ovarian pregnancy.

It has been demonstrated that it is possible for ovarian pregnancy to occur, and I do not dispute the possibility of its occurrence. It is only necessary that there be enough of an opening for the little spermatozoon to get at the ovum, and there will occur a pregnancy. But I have not seen a case that satisfied me that it was a true ovarian pregnancy.

Dr. REED: The discussion is interesting to me for two reasons. In the first place, although I have never had in my own practice an ovarian pregnancy, yet I had the pleasure of going through Dr. Price's seventy-two specimens, and among them I saw two specimens which simply convinced me of the occurrence of ectopic gestation. The tubes were distinct and disconnected, at least at the point of fecundation. The foetal nest or cavity had been developed from what had probably formerly been a Graafian follicle. The foetal development had continued from four to six months perhaps, so the character of

the change was unmistakable. Out of seventy-two specimens there were only two that I believe were ovarian, and I fancy that may be taken as about the proportion.

Dr. Zinke has raised a point that is very interesting. I, too, have taught, and with a considerable degree of emphasis, that ectopic pregnancy did not occur except after a destruction of the cilia in the endothelium. And I have taught, furthermore, that where we have an inflammation with purulent accumulation in the tube, an inflammation leading to double occlusion of the tube, that we virtually have a destruction of the cilia. I have been forced to recede from both positions, and by observations which have been made in my own work. In two cases of ectopic pregnancy operated upon in my hospital, the specimens were removed, and after proper preparation, in fifteen minutes from the time of removal the cilia were demonstrated by the microscope to be in active motion. They have also been demonstrated to be in activity in doubly occluded tubes. Probably the last to yield to the inflammatory process are the cilia. I do not wish to go further into this subject, because I do not want to anticipate a paper now being prepared by Dr. Bettman, but I think it is a very interesting subject, and I think we will be forced to recede from some positions we have taken upon the *ipse dixit* of distinguished gentlemen of the profession.

Dr. JOHNSTONE: That cilia may appear active after an inflammation sufficient to destroy them is quite likely, for it only takes a month for cilia to be regenerated. Such is the case in every menstruating uterus; twenty-eight days will regenerate the epithelium and also the cilia. As a rule, I do not get these specimens until the pregnancy is at about three months, and the impetus that pregnancy gives, the increased amount of blood and increased nutrition, all help to overcome this catarrhal inflammation and permit the regeneration of the epithelium. Thus, the simple fact of finding the cilia working at the end of three months does not prove their presence at the time of conception. The whole epithelium of the cavity is shed every twenty-eight days, and if a specimen is taken even a week afterward there will be found globular epithelium, and within two weeks columnar, and before menstruation occurs again the cilia will be found.

Dr. REED: Is there this rhythmical destruction and reproduction of the cilia in the *tubal* endothelium?

Dr. JOHNSTONE: No, sir.

Dr. REED: Well, I referred to the tubal endothelium.

Dr. PALMER: Is not the ciliated covering of the mucous mem-

brane of the corpus uteri originated within less than three weeks following menstruation? Is it not originated within a week or ten days?

Dr. JOHNSTONE: I do not know exactly, but the closer the time approaches the following menstruation, the more perfect will be the cilia.

Dr. REED: What *positive* evidence have we that the cilia of the tubal endothelium is destroyed by the ordinary processes of inflammation?

Dr. JOHNSTONE: Simply by having found it so time and again. I have seen tubes with no endothelium. But I do not think in very bad cases pregnancy would be possible, because the bacteria—*Streptococcus pyogenes albus*, etc.—to say nothing of the reaction, would coagulate an ovum even if it got in there; I believe, Mr. President, that there is an absence of tubal action; that is, the tube is hampered by bands, and I believe that is the cause of the failure of the ovum being carried into the uterus.

As to the possibility of a pregnancy, it may occur anywhere where there is warmth and lymph, where the ovum and spermatozoon may get together. I have seen three pregnancies in a single tube, and there is a case recorded in which there was neither tube nor uterus, and a foetus was developed in the peritoneal cavity, and the placenta was in the peritoneal cavity. All that is necessary to the formation of the placenta is to have the adenoid tissue begin to grow.

Dr. GUSTAV ZINKE: If the statement is true, that the fertilized ovum may grow anywhere where there is lymph and warmth, then primary peritoneal pregnancy is possible. It has been said and is still believed—and no writers except those who antedate Tait have attempted to controvert the statement—that an abdominal pregnancy occurring primarily upon the peritonæum is possible. The ovum before leaving the Graafian follicle is $\frac{1}{5.0}$ of an inch in diameter, and it is most probable that the peritonæum would absorb such an object. However, we know that after the rupture of a tubal pregnancy the placenta may extend and continue to grow upon the peritonæum. Perhaps the absorptive power of the peritonæum was destroyed in the case mentioned.

Dr. RUFUS B. HALL: May it not have been that there was a small sinus with a thin wall, and the thin wall was ruptured so that the pregnancy was then in the abdomen? While this is all theory, I am of the opinion of the last speaker, and, knowing the absorptive power of the peritonæum, it is hardly creditable to an intelligent person to believe an ovum could be impregnated in the peritoneal cavity. The pregnancy must have its beginning somewhere outside of the peri-

toneal cavity proper until the fecundated ovum is of such a size that the peritoneal cavity can not absorb it. At any rate, this is a safe doctrine for operators, teachers and general practitioners to accept, *i. e.*, that primarily all ectopic pregnancies are tubal. It is safer for the patient. If we should adopt the other theory, that occasionally they are intra-abdominal, then we would operate less willingly than we do now. Therefore, while it is exceedingly interesting from a pathological point of view, practically it is of no importance whatever; but it is of practical value we agree, that we stick to the rule or law that is generally accepted now.

Dr. JOHNSTONE: All truth is of practical value, and what we are after now is simply the truth.

The conundrum, that the ovum should develop in a little sinus, is more difficult for me to believe than that the ovum developed in the abdominal cavity proper. In the case I spoke of, the uterus, tube and everything in connection with it, had been removed and were in the hands of the man who reported the case. He followed up the case and he found the pregnancy (fourth or fifth month) high up in the abdominal cavity, with no signs of anything having ruptured. The fact that these cases probably do occur in a small percentage of cases, perhaps the fraction of one per cent., should be no hindrance to an operation whenever there is hæmorrhage. For the first three months the fœtus is simply an amœba, and will thrive for that length of time all right on simple lymph. I think it would be of much more practical value to believe that than to believe what we know is not true.

Dr. GUSTAV ZINKE read a paper on

Amputation of the Rectum, with Excision of the Coccyx, for Carcinoma Recti, with Specimens.

This specimen represents the cancerous rectum of Mrs. R., aged forty-six years, who presented herself the first time at my office August 8, 1894, with the following history: Housewife. Menstruates of late every two or three weeks. This is probably due to the approach or beginning of the menopause, since no lesion of the uterus or of its appendages can be discovered. She was never seriously ill until her present ailment, for which the operation was done, with the hope of prolonging life, if not a permanent cure. The family history does not indicate the prevalence of tuberculosis or malignant disease among her family. She is the mother of three children, one of whom died during infancy. Her disease began with rectal tenesmus, gradually becoming more and more painful, and within the past six months,

previous to her first visit, there were frequent, painful bloody spurts from the rectum, over which she did not always have complete control. Every defecation was attended by great pain and loss of blood. The "malignant cachexia" was well marked, and an examination revealed what was suspected, cancer of the rectum, which extended about three inches upward from a point immediately above the anus. Through the vagina a hard, irregular, nodular mass could be easily felt as high up as the cervico-vaginal junction. My first impression was that the patient could not profit by an operation, and therefore made efforts at relief only. These consisted of daily irrigation of the bowels, followed by an iodoform suppository and the administration of an opiate for the relief of pain. Not being able to secure relief from intense suffering by these means, I made another very careful examination, under chloroform, dilating the sphincter carefully and sufficiently to obtain a good view of the diseased region. The diagnosis was confirmed by microscopic examination of specimens removed at the time. Being certain that the disease must result fatally, and considering the good results in the hands of Dieffenbach, Billroth, Volkmann, Nussbaum, Rose, Czerny, Kocher, Barkenhauser, Holmer, Kraske, Esmarch, and others, I determined to amputate the rectum in this case. In nearly every instance where the extirpation of the cancerous mass was done early and thoroughly, immunity from the disease was enjoyed in many instances for the period of four to six years, and quite frequently a permanent cure had been obtained, even in cases where the disease had made extensive inroads and the lymphatics had been considerably involved. In this instance the involvement of the neighboring tissues, especially on the right side, from which a number of enlarged lymphatics were removed, was well marked.

The operation was performed three weeks ago to-day, September 20th, with the kind assistance of Drs. Palmer, Evans, Shillinger and Cook. The patient was thoroughly prepared for the operation by completely emptying the bowels by the aid of saline cathartics and irrigation; she also received two baths daily for a week prior to the operation, and on the night before the pubes, perinæum and anal region were shaved and dressed antiseptically. She was placed in the extreme lithotomy position, so as to expose thoroughly not only the perineal, but also the sacral region. Before commencing the operation the bowels were once more irrigated by the free use of warm sterilized water, a precaution which proved to be quite necessary by the amount of fæcal matter discharged. The irrigation was kept up

until the bowels were absolutely clean. A piece of gauze was then introduced into the rectum, to prevent the escape of any fluid still remaining.

In the progress of the operation I followed closely the rules laid down by Kocher and Kraske, as given by Esmarch in his admirable work on *Diseases of the Rectum and Anus*, 1887, with a few slight, but, I think, important modifications. I commenced by making an incision in the median line, extending from the anus to a point a little above the sacro-coccygeal joint. Then I dissected carefully down toward the rectum, until I reached the diseased parts. This done, I proceeded to enucleate the whole of the coccyx, which was easily snipped off with a pair of sharp bone forceps, after separating the soft parts from it. The next step consisted of making a circular incision around the anus, around which I cast a heavy ligature, so as to secure as absolute freedom as possible from contact of intestinal contents with the wound during the operation. Having dissected up the anal portion, an incision was made in the median line from the anterior border of the anus to within perhaps a quarter of an inch of the posterior commissure of the vulva. Having freed the rectum in this region, I carried my finger up the rectum to a point above the seat of the disease. Having separated the rectum posteriorly and anteriorly, and the anus below, I began to enucleate the same laterally, working for a while on the left and then on the right side of the diseased gut, until I had freed the entire mass completely. Hæmorrhage was controlled first by the application of hæmostatic forceps, and then by ligatures. The ischio-rectal spaces were thoroughly cleaned out and freed of all that looked suspicious. In this way nearly all the adipose tissue, so abundant in this region, was taken away. Having arrested all the hæmorrhage, the diseased gut was seized with the hand and pulled down, until the healthy portion above it was beyond the level with the external border of the wound. A suture was then introduced, grasping the skin and the subcutaneous tissue on the one side; then the wall of the bowel anteriorly, and again the subcutaneous tissue and skin at a corresponding point of the opposite side, and tied with just sufficient firmness to hold the parts in apposition. In a similar manner a suture was introduced posteriorly. The wound was then thoroughly irrigated with water and thoroughly bathed with peroxide of hydrogen. Then two sutures were introduced, about an inch apart, in the incision anterior to the rectum, so that an opening was left near the gut for the introduction of the drain. The posterior cut was closed in a similar manner but by three sutures, leaving an open-

ing, about an inch and a half in length, near the gut. The cavities created by the operation were completely filled with iodoform gauze through these two openings. This accomplished, the external wound was protected by sterilized gauze, and the diseased gut amputated. In order to secure prompt union between the terminal end of the healthy gut and what was to constitute the future anus, I sewed it to the margin of the wound by a continued catgut suture. In this manner I succeeded in preventing any fluids still within the intestine to infect the wound. During the enucleation of the diseased mass, the gut was ruptured in two places, but the accident being instantly discovered each time, the openings, which were quite small, were at once closed by sutures. The modifications adopted in removing this rectum suggested themselves at the time and consisted in tying the gut below and above before the operation was finished, in not amputating it until after the closure and dressing of the wound, and sewing the margin of the bowel to the edge of the integument. The external toilet of the wound consisted of nothing but sterilized gauze and cotton, kept in position by a "T" bandage. The woman was permitted to lie upon her back and sides, according to her own wishes and inclination. For the first four days the outer dressing alone was changed and only when soiled. Fortunately, the bowels behaved well; there was but a slight discharge of fecal matter during this time. At the end of the fourth day the sutures, with the exception of the continued catgut sutures, were removed. The gauze from the wound was also taken out and the cavities thoroughly irrigated with sterilized water and again filled up with gauze steeped in a mixture of iodoform and glycerin. This was done daily during the next five or six days, after which the wound was dressed, in the same manner, twice daily, or whenever the patient had become soiled by the evacuation of the bowels or bladder.

At this time, three weeks after the operation the wound is nearly closed; the gauze required for filling out the cavities is less than one third of what was needed in the beginning, and with the exception of light phlegmasia dolens of the right leg, which came on about a week ago, the patient is in excellent condition. Should there be a recurrence of the trouble in the future, I shall certainly have succeeded in relieving the patient of great suffering for some time to come and added a few years to her life, to which she clings with extraordinary tenacity, and the prospect of a permanent cure is not to be excluded.

DISCUSSION.

Dr. JOHNSTONE: Did you make any effort to save the sphincter?

Dr. ZINKE: No, but I kept as close to the diseased mass as I possibly could, and there is a good deal of contractive power of the sphincter left, and the patient has marvelous control over the action of the bowels. When they become loose then the bandage is soiled a little, but she usually has time to call the nurse and have the bandage removed. The action is that of the accelerator muscles rather than of the sphincter. However, the amount of control she has over the movement of the bowels is simply surprising when we consider what an extensive opening was made.

Dr. PALMER: It has always been interesting to understand how in these cases the rectum can gain a retentive power. Of course the new-formed cicatricial tissue about the new anus has much to do with this, because of its contractile influence. And habit and the will-power must aid.

In some of these cases of rectal extirpation for malignant disease, it is not necessary to excise the lower sphincters, but the exsection embraces only a section of the rectum above the internal sphincters, or, it is a portion between the second and third sphincters. Then, of course, the retentive power of the rectum becomes unimpaired. Dr. Zinke's operation was done slowly, carefully and neatly. Dr. Ransohoff, of this city, has probably had the largest experience of any one in this section. He told me recently that he had done the operation six times, with one death.

Dr. JOHNSTONE: I would like to know what the results have been in extirpating syphilitic strictures of the rectum. Such cases are almost as fatal as cancer. It seems to me that in the case of an old tertiary syphilitic, by making the incision as Dr. Zinke has described, in which you peel out the mucous membrane and simply cut through the sphincter, even if you make a cut wider than the original rhapshe, it would not destroy the action. In these cases you have to make your cut to suit the disease, and if the sphincters are involved they have to go. I think, however, in those cases in which the stricture is a little distance up the bowel, it would be best to attempt to save the sphincters.

STATUS OF GYNÆCOLOGY ABROAD.

BY HIRAM N. VINEBERG, M. D.

Occlusion of the Rectum through Wedging-in of the Uterus in the Pelvis after Laparotomy.

KEHRER (*Centbl. für Gyn.*, 1894, No. 22) reports two cases of this unfortunate accident, both ending fatally. In the one a castration was done for a myomatous growth, the size of a child's head, in the posterior wall of the uterus; in the other castration was done for osteomalacia at the same time a Cæsarean section was performed. In both instances the uterus became wedged in the lower part of the pelvis, causing an obstruction of the rectum. The true condition was not recognized until at the autopsy.

The diagnostic features of this condition are :

1. Marked flatulent distention of the colon and a considerable accumulation of fæces in the sigmoid flexure with pain in the region of the colon descendens.
2. The detection of the obstruction by a digital rectal examination.
3. The immediate return of the unchanged enemata.

A Tuberculous Ovarian Cyst and Uterine Polyp.

Dr. M. MADLENER (*ibid.*) reports having found at the autopsy of a woman who died from pulmonary phthisis an ovarian cyst the size of an adult head. In the interior of this cyst was a greenish purulent fluid with cheesy particles in it. The microscope showed that the internal wall of the cyst was studded with tubercle cells. Attached to the fundus uteri he also found a polypus four centimetres long which consisted of tubercle and giant-cells and tubercle bacilli were detected. According to the author there is only one other case in literature of a tuberculous polypus.

A Case of Rapid Retrogression of a Sarcoma after an Artificial Abortion.

JAHN (*Centbl. für Gyn.*, 1894, No. 23) reports a case of this kind. The patient was seven months pregnant and had a swelling in the right axilla which rapidly grew. There was enlargement of the sub-clavicular glands of the same side. She now became cachectic had great pain in the abdomen, considerable fever and a rapid pulse.

Labor was induced by intra-uterine injection of glycerin. After delivery the swelling in the axilla gradually disappeared and with it the subclavicular glands diminished in size.

A Pathognomonic Sign of Congenital Retroversion of the Uterus.

M. SANGER (Reprint Dedication Paper to Fiftieth Anniversary of Berlin Gynecological Society).

Le Dentu and Pichevin drew attention to the existence of a crest on the posterior wall of the uterus in cases of retrodisplacements and which they named "crista mediana postica." Sanger claims to have observed a similar ridge on the anterior wall of the cervix in cases of congenital retroversion and terms it "crista mediana cervicis antica s. antecervicalis." He describes it as a frenulum-like, sharply angular median ridge in the anterior vaginal vault which extends from 1 to 1.5 centimetres. This ridge divides the anterior fornix into two shallow depressions which in marked cases can be seen with the speculum. In addition there is abnormal shortening of the vagina, particularly of its anterior wall and smallness and shallowness of the anterior vaginal vault, as well as shortness of the anterior cervical lip. As he has only observed it in nulliparæ, with long, small retroverted uteri, and as he has been unable to detect any other cause for the retrodeviation he concludes that the latter when in conjunction with the ridge must be of congenital origin. He looks upon the ridge as the remains of the fusion of Müller's ducts.

Post-mortem Cesarean Section.

J. BÖCKER (*Cent. für Gyn.*, 1894, No. 24) reports the case of a woman at the end of gestation who was brought to the Klinik in a moribund condition from œdema of the lungs consequent upon cardiac disease. In a short time the woman expired and immediately thereafter an abdominal section was done and a living child extracted. The child lived at the time of the report, was 108 days old and weighed 5,610 grammes. The interesting features were that in spite of the death of the mother through asphyxia a child was delivered that was resuscitated without any great difficulty. Secondly that after delivery the uterus contracted to about half its former size. This formed the second case of the kind that had occurred in the Klinik.

Myomectomy. Intraperitoneal Treatment of the Pedicle.

G. LEOPOLD (*Cent. für Gyn.*, 1894, No. 26) reports nine further cases of myomectomy in which he carried out the intraperitoneal or

retroperitoneal method of treating the stump, without a death. The advantages claimed for this method are—

- (1) Its easy execution.
- (2) The slight loss of blood.
- (3) Its feasibility no matter what the position of the growth may be.

The Treatment of Post-partum Hæmorrhage.

A. DÜHRSEN (*Berl. Klinik*, Heft 76) discusses at length the advantages of his method of arresting post-partum hæmorrhage by tamponing the uterus with iodoform gauze. He describes in detail the technique of the procedure. If the hæmorrhage persists after packing the whole vagino-uterine canal a compress should be applied over the uterus. If in spite of all this the hæmorrhage be not arrested, a contingency which has not occurred in his experience, he would advise packing the uterus with salicylic cotton. In cases of hæmorrhage from cervical tears for general application he would prefer the packing of uterus and vagina with iodoform gauze to stitching the cervix. This advice he considers particularly applicable to general practitioners who have not the necessary skill to sew up the cervical tears. In conservative Cæsarean section he would strongly recommend the method after the uterus has been sewn up. In order to avoid the entrance of air into the uterus, the patient's hips should be well elevated. A considerable part of the paper is devoted to a polemical discussion with Veit on the advisability of the manual separation in cases of adherent placenta and to refute his charges of the dangers attending the author's method of tamponing the uterus.

Extirpation of a Pancreas Cyst. Recovery.

P. ZWEIFEL (*Cent. für Gyn.*, 1894, No. 27) reports in full the history of a case of pancreas cyst for which he had operated, removing the entire cyst with recovery of the patient. Although the hæmorrhage is very great in these cases he was enabled to keep it in check by seizing hold of the tissues with forceps, ligating and cutting between the ligatures. He considers extirpation far superior to drainage as the convalescence is so much more rapid and satisfactory. The patient four months afterward was in perfect health and the urine which had been highly diabetic did not show a trace of sugar.

A New Method of operating in Stenosis of the Vagina.

V. ROSCISZEWSKI (*Cent. für Gyn.*, 1894, No. 27), after failing to cure a case of stenosis of the vagina by the usual methods in vogue

excised the cicatricial tissue and covered the denuded surface with a flap obtained from one of the labia minor. The result was good excepting a small area at the lower part of the wound.

Sterilization of Catgut.

Dr. KRONIG (*ibid.*) reviews briefly the different methods of sterilizing catgut all of which are imperfect excepting dry heat at a temperature of 140° C. (284° F.), the objection to which is the difficulty of regulating the heat at that temperature for four hours. He has been experimenting with various fluids which have a high boiling point and finds that cumol is the best for this purpose. Its boiling point is between 168° and 178° C. Catgut boiled in this fatty liquid retains its strength and is rendered perfectly free from germs. Zweifel has been using catgut prepared in this way in his abdominal operations with perfect satisfaction.

[The reporter has been using catgut prepared by dry heat (250° to 270° F. for three hours) in all abdominal work for the past fifteen months and thus far has had no accidents with it. Every operator will admit the advantage of using an absorbable material within the abdominal cavity and though the preparation of catgut with dry heat by one's self is troublesome the advantages gained repay one for his care and trouble.]

Supravaginal Amputation of a Septic Puerperal Uterus. Recovery.

Dr. A. SIPPEL (*Cent. für Gyn.*, 1894, No. 28) has had the good fortune to save the life of a patient in advanced sepsis from puerperal endometritis by the bold and heroic measure of opening the abdomen and removing the diseased uterus at the cervix. The infection seemed to be limited to the cavity of the uterus as a result of placental remains. The parametria were free. An attempt to remove the placental remains with the finger, showed such involvement of the muscular tissue that a perforation of the uterine wall was imminent. Irrigations with chlorine water were followed by only temporary benefit. As the patient was surely going to die shortly the author decided to give her one chance by removing the uterus. This was quickly and readily done, precautions being taken not to infect the peritoneal cavity. After the uterus was drawn out through the abdominal incision and the pedicle tightly tied with an elastic ligature the incision was closed with sutures. The pedicle was then surrounded by gauze and the uterus cut away. The putrid material was quickly mopped up, the stump treated with ten per cent. carbolic acid and

cauterized deeply with the Paquelin. The result of the operation was very striking, the pulse and temperature fell at once and the patient made an uneventful though slow recovery.

This is the first case the author claims in which a diseased uterus has been removed for puerperal sepsis. Of course the procedure is only justifiable when the uterus alone is involved and when other means have failed. Another indication for the operation would be pyæmia as described in the older works as a result of purulent phlebitis.

New Points regarding Rupture of the Uterus and Vaginal Vault.

H. W. FREUND (Reprint of Dedication Paper to Fiftieth Anniversary of the Berlin Gynæcological Society) makes the following case the basis of some remarks on rupture of the uterus and vaginal vault. He was called by a midwife to a primipara, thirty years old, who had already been twelve hours in labor without any progress. The labor pains were severe from the outset, otherwise nothing unusual had been noticed. The patient made the impression of being nervously exhausted, was quite clear in mind and had a temperature of 38° C. and a small regular pulse of 120. The abdomen was moderately distended relatively. Only under narcosis was the contour of the uterus to be made out. The uterus was found of cylindrical form reaching to the border of the ribs and showed nothing abnormal. A contraction ring was not to be detected with certainty. The foetal head was no longer to be felt from the outside, spine and foetal heart sounds on right side, small parts on the left side. External genitalia hypoplastic, not swollen. Perinæum and vagina somewhat rigid. No unusual discharge, os no longer to be reached. The well-formed, soft, not large cranium lay in the pelvic outlet, the small fontanelle right anterior, the parietal suture in left oblique. Bladder drawn high up, small. The catheter withdrew clear urine. The labor pains did not advance the delivery. With forceps a living child was readily extracted without any injury to soft parts of mother. The placenta spontaneously expelled without any great loss of blood. A few minutes later a slight hæmorrhage which was quickly controlled by a hot vaginal douche. From this on the uterus remained contracted to a small size and the abdomen grew flaccid. On the next day the condition was favorable (temperature 36.2° to 36.8°) save that the dependent part of the abdomen was not quite free from sensitiveness. On the second day the temperature rose without a chill to 38.7° C. No new symptoms developed. In the absence of peritonitis the first suspicion of an injury returned and the author passed his whole hand into the

uterus. He found a transverse tear in the fundus which involved almost its whole width, so that he could easily pass four fingers into it. The peritonæum was intact and the uterus well contracted. On questioning again as to the event which might have caused the tear the patient recalled having two days before the onset of labor received a fall and struck her abdomen against the curbstone. She instantly felt a sharp pain in the abdomen which passed off in a few seconds and she was enabled to walk home and mount three flights of stairs. The pain had not returned since then. The author briefly states that subsequently a parametritis on the right side developed which completely disappeared in seven weeks under appropriate treatment. He looks upon the condition as an extensive traumatic rupture of the uterus, occurring in the fundus, the usual situation for such ruptures as pointed out by him in a former article. Fortunately the peritonæum escaped, hence the absence of hæmorrhage and peritonitis. The interesting feature is the circumstance that so extensive an injury occurred with few or no symptoms. He draws attention to Kaltenbach's article in which the writer holds that in non-traumatic cases rupture of the uterus is complicated with a tear in the cervix. The rupture arises either from an over-distention of the cervix (hydrocephalus narrow pelvis, transverse presentation), or from the child being rapidly extracted through a cicatrized and changed uterine ring. The rupture of the uterus is usually incomplete, but the layers of the broad ligament are as a rule widely opened. The complicating cervical tear often extends deep into the vagina. Freund accepts these views but adds as other causes, congenital stenosis, spastic contraction, rigidity, etc., of the cervix. He agrees with Kaltenbach also that these cases are not to be treated by a tamponade, which only increases the tear and allows of a hæmorrhage to take place within the layers of the broad ligaments. The essential point of treatment consists in an exact diagnosis, sewing up the cervical tear, and an abdominal compress.

Puerperal Hyperinvolution of the Uterus.

Dr. OTTO ENGSTROM (Reprint of Dedication Paper to Fiftieth Anniversary of Berlin Gynæcological Society) on the strength of observing closely fifty cases of so-called lactation atrophy of the uterus, in private practice adheres to his former theory that it is not a normal condition but is due to the anæmia and run-down condition of the woman. The treatment consequently should consist of a generous diet, iron and arsenic. At the commencement it is not always neces-

sary to discontinue lactation. Local treatment should be instituted only in case the uterus does not regain its normal condition under general treatment.

Pulmonary Embolism following Operations on the Posterior Vaginal Wall.

E. BAUM (*Cent. für Gyn.*, 1894, No. 29) reports two cases in which the patient presented symptoms of pulmonary embolism after operation on the posterior vaginal wall. Both patients recovered and the wounds healed by primary intention. He attributes the recovery to the circumstances that the thrombosis in the venous plexus of the vagina was of an aseptic nature.

INFANCY; PUBERTY; MATURITY; MENOPAUSE;
SENILITY.

BY E. C. DUDLEY, M. D.

The life of woman may be divided into five periods, each corresponding to a special phase of her sexual existence. They are infancy, puberty, maturity, the menopause and senility.

Infancy.—Infancy includes the first ten or twelve years of life and although a period of great pathological significance, is rather a subject of pædiatrics than of gynæcology. During this period the reproductive organs are for the most part functionally dormant; they are undergoing a gradual development preparatory to the more rapid and radical changes of puberty. Malformations and inflammations occasionally observed in infancy will be noticed later.

Puberty.—Puberty is the period in which the child becomes the woman. Like the menopause it is a critical transition period, and upon its normal course depends much of the after health, comfort and usefulness of the individual. Its influences are fundamental, not only in the reproductive organs but in the entire woman. The anatomical basis of puberty is the full development to maturity of the reproductive organs. The child uterus for instance is small, soft, and plastic; its canal varies in length according to age from one to two inches. The length of the uterine canal after maturity is two inches and a half. Similar changes occur in the ovaries and in the other

genital organs. Puberty is also marked by enlargement of the pelvis, by the appearance of hair on the mons veneris and elsewhere, by a general rounding of the form with adipose tissue and by notable psychic changes. Its essential physiological features are the first appearance of menstruation and ovulation, which indicates that the sexual nervous organization is approaching that maturity which renders the woman capable of pro-creation.

Menstruation is characterized by a bloody mucous discharge, containing epithelial cells and lymph corpuscles, from the body of the uterus and Fallopian tubes ; it occurs at regular intervals unless interrupted by utero-gestation and lactation or by disease, and is the physiological recurrent development of the endometrium—of an organic cycle in the female sexual life. It first appears on the average about the fourteenth or fifteenth year, sometimes as early as the ninth or tenth and occasionally not until after the eighteenth. Instances have been recorded in which apparent sexual maturity occurred as early as the fourth or fifth year. As a rule it comes earlier in warm and later in cold climates. Early menstruation is often followed by late menopause. The human menstrual cycle covers a period of about twenty-eight days ; the flow continues normally from three to seven days and the average amount is from four to five ounces.* Painful menstruation is always proof of some pathological condition, but the flow is normally preceded by a sensation of weight in the pelvis. Its utility and physiology have been the subject of many superstitions and speculations. Of all the modern theories of menstruation, that of Arthur W. Johnstone is the most reasonable.† He says that the endometrium is not strictly a mucous membrane but rather of the nature of adenoid tissue like that of the spleen, the tonsils, the thyreoid body, the thymus and lymphatic glands and the lymph tissues in the walls of the alimentary canal. Shortly before menstruation this begins to grow rapidly until it becomes a vascular cushion-like body, filling and slightly pressing apart the uterine cavity. The pressure is increased by the ingorged blood and lymph vessels until in the course of the periodic cycle the smaller vessels rupture, the menstrual flow is established and the endometrial tissue, in the absence of pregnancy, now over ripe, degenerates, and too old to form a placenta and not needed to nourish the ovule, is carried off. The object of menstruation is to dispose of this material which without

* Funcke, *Lehrbuch der Physiologie*, 4th edition, vol. ii, p. 991, Garrigues.

† Arthur W. Johnstone, *Trans. Brit. Med. Soc.*, June 23, 1886.

impregnation is useless. The failure of the lower animals to menstruate is explained by the fact that the material is taken up and carried away by the lymphatics.

Ovulation involves the maturing of the Graafian follicle, its rupture and the escape of the ovum. Until recently menstruation has been thought to be an external manifestation of ovulation and dependent upon it, but whatever may be the relation between these two functions, that of cause and effect is untenable for the following reasons: First, the regular recurring ebb and flow of the menses is synchronous with the recurring development and degeneration of the endometrium. No such corresponding cyclical regularity has been shown in ovulation. Second, menstruation often continues after the removal of the ovaries. There is reason to conclude that both ovulation and menstruation are controlled by the utero-ovarian plexus of nerves.

The connection of menstruation with impregnation is now easily explained. The periodical wave of uterine nutrition is the preparation of the uterus for the reception and nourishment of the impregnated ovum. The uterus prepares itself for pregnancy and the event not occurring, it throws off the now useless tissue to renew it again within twenty-eight days, and so on throughout the sexual life of the woman, unless interrupted by utero-gestation and lactation.

Although the appearance of menstruation indicates that maternity is possible, it by no means follows that the development of the individual is complete or that she is capable of fulfilling the requirements of maternity. Until about the twentieth year the nervous system is unequal to the strain of child bearing and child-rearing, the muscles are inadequate to the carrying and expulsion of the child and the pelvis is often too small to give it safe exit. The period of puberty should therefore be taken as extending not only over the few months required for the establishment of menstruation but as always including the time necessary for full physical development. During this period the energy of the girl is taxed by the rapidity of the sexual development, by the great liability to circulatory disturbances, by the physical and mental strain of education, by the conventionalities of society which may require injurious changes in dress and personal habits. The necessity therefore for great care is apparent. Nutritious and simple diet, frequent rest, moderate amusements and adequate exercise are essential. Study, especially during menstruation, should never be pressed to the point of fatigue. Inasmuch as pas-sional life now begins and the whole nervous organization is therefore subject to new impulses and requirements, reading and associations

should be carefully selected and should exclude whatever may unduly excite the emotions. Errors committed at this time may leave impressions which can never be effaced and such grave consequences as malnutrition, psychoses, sterility, menstrual and other functional disorders are possible and may make the woman a hopeless invalid. For reasons already given, one of the most serious errors is premature marriage.

According to the prevailing ideas, the higher education and civilization strongly tend to check and to pervert the development of woman, to cause numerous weaknesses, to increase the burdens and dangers of maternity and to lessen the vigor of the offspring. We are told that the Republic is in danger from the deterioration of our women. The limits of our story can not include an adequate discussion of the question nor are sufficient facts known upon which to base a valid conclusion. These pessimistic forebodings, however, have arisen and gained headway rather upon assertion than upon fact. The ability of the squaw immediately after parturition to resume the march is often urged as an argument against the higher education of women, but this proves nothing. Observation among Indian women has abundantly shown that want of care, during and after labor, is the constant cause of complete prolapse of the uterus, vagina and bladder, and of numerous other diseases which are relatively much more prevalent among them than among the higher classes of civilized women. The educated woman could "resume the march" if it were necessary and history has shown many heroic examples, but education has taught her that this is unsafe. The savage woman looks old and withered at thirty, the high class civilized woman preserves something of youth until after the age of fifty. The highest civilization and its resultant heredity, notwithstanding its artificial and social requirements, does not re-enforce but more than offsets any deteriorating influence which may come of a departure from primitive conditions. This is the reason why the vitality of a civilized race is much greater than that of the savage and why civilized woman has a power of resistance, which if properly trained and directed, will enable her to endure and to survive many trials to which a ruder organization would succumb. To make the deterioration of woman, and through this the enfeeblement of the race, a price which must be paid for the higher education and civilization, would be to reverse the law of evolution and to put in its place the law of the survival of the unfittest.

Maturity.—The time of maturity extends from the end of puberty to about the forty-second year. Under normal conditions this is a

relatively healthy period. Unlike puberty and the menopause, it is comparatively free from the neuroses and psychoses, except those connected with pregnancy. The woman is subject, however, to the burdens and accidents of pregnancy and maternity and to physical and mental overstrain, she is also liable to the occurrence of non-malignant neoplasms of the uterus and ovaries which endanger life and health, and to the dangers of puerperal and other infections.

During the child-bearing period, the gonococcus of Neisser is one of the most potent causes of metritis, pyosalpinx, ovaritis, peritonitis, cystitis, pyelitis and nephritis. After gonorrhœa in the male has apparently been cured, it may complicate the question whether he can properly marry; a question upon which the physician is often required to pass judgment. His responsibility is then measured by the possibility of the destruction of the reproductive organs with resultant sterility and hopeless invalidism throughout the life of an innocent woman.

The Menopause.—The menopause, sometimes called the climacteric, sometimes the change of life, is the second critical period. It usually occurs between the ages of forty and fifty. The time of its occurrence is abnormal if before the fortieth or after the fiftieth year. In very cold climates both puberty and the menopause are delayed; its duration is from three to five years. Pathological causes more or less recognizable, may shorten or lengthen it.

The anatomical and physiological basis of the menopause is atrophy of the reproductive organs and cessation of their functions. The follicles of the ovaries disappear, the muscular and glandular elements of the uterus become rudimentary. Both organs shrink to small, hard bodies composed mostly of dense fibrous tissue. The Fallopian tubes become shorter and narrower and sometimes their canals grow together at one or more points. The uterine canal often closes at the internal or external os, the vaginal portion of the uterus disappears in many cases so that the upper extremity of the vagina is directly continuous with the uterine canal. The vagina becomes narrower and shorter and loses its elasticity; its lining of pavement epithelium often gives way to a fibrous tissue surface containing more or less cicatricial tissue. Like changes occur in the vulva. The breasts also atrophy, lose their glandular elements and become smaller unless, as often occurs, the atrophic loss is supplied or even outbalanced by the deposition of fat.

The essential phenomenon of the menopause is permanent arrest of all functions peculiar to the reproductive organs. It is the inver-

sion of the developmental process of puberty. It marks the end of active sexual life. It is the beginning of old age. The atrophic changes are usually characterized as senile atrophy.

The symptoms of the menopause are referable to two stages ; a stage of menstrual irregularity preceding the cessation of the menses, and a post-cessation stage of variable systemic disturbances. In normal or nearly normal cases the irregularities are not excessive ; the systemic disturbances are slight. The period is one of unstable equilibrium and the woman at times may be capricious and emotional, yet she passes through this physiological crisis with no inconvenience, save a number of minor disturbances. Among those disturbances are the characteristic vaso-motor flushes, perspiration, vertigo, somnolence, numbness and faintness. The menstrual function ceases as it began, with marked symptoms referable to the nervous system. Irritability, apprehensiveness, hysteria, melancholia and other psychic disturbances are common and in the abnormal cases may be exaggerated. The menstrual deviations vary in wide limits. The flow may gradually decrease ; it may occur at short intervals or become continuous ; it may become so excessive as almost to amount to dangerous hæmorrhage or life may be jeopardized by a slow continuous drain.

There is an increased tendency to malignant diseases of the uterus and breasts during this period. The excessive fear of this often preys injuriously on the mind of the woman. The menopause often cures plevic disease because pathology is physically modified by disease and because atrophic changes at the same time when they arrest physiological processes may also put an end to pathological processes, especially is this true if the pathological processes have depended upon the functional activity of the organs involved. It therefore follows that a woman who has suffered for years from chronic uterine or ovarian disease may now enter upon a long period of increased vigor and robust health. It may however be a dangerous one—a fatal mistake to assume that the ills occurring at this time of life properly belong to the menopause, that they need give no anxiety, that they will disappear with it and that they therefore require no attention. Although such a notion prevails yet some of the most grave disorders of the menopause are consequent upon pathological states, over which atrophy of the reproductive organs can have no control. Continuous and excessive hæmorrhages and excessive nervous disturbances are matters of especially grave solicitude, since the one may indicate malignant disease and the other may tend to mental derangement. Prompt diagnosis and energetic treatment may be imperative.

Senility.—The decline of life is normally a period of repose. The functions of the reproductive organs having ceased the organs have little physiological significance. The special disorders and dangers of this period, such as inflammations and neoplasms, will be considered in their proper connection.—*The Chicago Clinical Review.*

OVARIOTOMY ON A PATIENT IN HER EIGHTY-FIFTH YEAR.

By J. PAUL BUSH, M. R. C. S.

A widow, aged eighty-four years, was operated on by Dr. Bush at the British Royal Infirmary September 12, 1893.

For twelve months prior, she had noticed a steady increase in the size of her abdomen; for nine months past had suffered pain in her abdomen, and for the past three months vomiting had occurred, which was severe at the time of the operation. The patient was unable to move about, not only on account of her pain and vomiting but also on account of her great size.

A small incision exposed a cyst which was tapped, yielding nineteen pints of fluid. A large thin-walled multilocular cyst without adhesions was then removed. The first week after operation her temperature ranged 96° to 97° and remained at 97° , which appeared to be her normal temperature. The wound healed rapidly and the patient returned home October 16th, well. The exact age of the woman was confirmed by documents, at the time of her admission to the hospital.

Dr. Bush referred to a case of Dr. Spencer's, reported in the *British Medical Journal*, December 9, 1893, of a patient, aged eighty-three years, whom he claimed to be the oldest woman upon whom an ovariectomy had been performed, except Dr. Homan's case who was a few weeks older than Dr. Spencer's (*Brit. Med. Jour.*).

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THE PERITONÆUM.

BY BYRON ROBINSON, M. D., CHICAGO.

From the epoch-making periods of Wolff, Meckel, Fleischmann, Oken, Haller (1708-1777, German anatomist, physiologist and philosopher) and others, we will glance at a period when certain opinions were becoming general property and settled. The work done on the anatomy and development of the peritonæum and digestive tract had brought to light many natural facts. The time was right for the investigation which told the story of the development of the final complicated structure known as the peritonæum. This subject had engrossed the attention of men for a quarter of a century. The first great pioneers had passed to the unknown or retired from active labors. We will discuss the views entertained at the beginning of the second quarter of this century, after which we will pass to modern and more practical matters. In the development of the peritonæum the names of L. Fr. von Froriep (1779-1847, German anatomist and obstetrician), Lauth (1758-1826, professor of anatomy at Strasburg) and J. Mueller, stand prominently. The especial questions which man had to ask were (*a*) How does the great omentum arise from the peritoneal sac? (*b*) Why are the stomach and colon alone connected with it? (*c*) Why does the omentum arise in man and certain lower animals only and not in all?

The epoch-maker in the development of the peritonæum was Johannes Mueller, who published his labors in 1830. Mueller started his labors where others left off and by dissecting and examining many

embryos under four months old, finally stated that he hoped he had discovered the cause of so noteworthy a formation as the great omentum. Mueller's idea was that the layers of the omentum coalesced and finally presented a double layer of peritonæum reaching from the greater curvature of the stomach to the transverse colon and from the transverse colon to the posterior abdominal wall. From Fleischmann (1777-1850, German anatomist), Kieser (1779-1862, German biologist) and Meckel, Mueller knew that the digestive tract at first was a straight tube reaching from the heart to the cloaca. Also Oken (1779-1851, a German biologist whose name is connected with the Wolffian or Oken bodies) laid further foundations for Mueller's final conclusions. By this date (1830) it was well known that the stomach turned from the left to the right and that it also twisted on its axis and by these two processes in the second month of fœtal life the stomach loses its perpendicular position in the body. He also knew from the labors of others that the digestive tract below made a peculiar long, parallel loop which passed out at the umbilicus and was connected at its pointed angle to the vitelline duct. This loop gradually returned into the abdominal cavity. Mueller considered it of noteworthy interest to investigate the connections of this intestinal loop to the abdominal wall after it returned.

As is known in very young embryos (four weeks) the stomach is perpendicular; hence the double fold of peritonæum which holds it will also be perpendicular and arise from the middle of the dorsal wall. The double fold of peritonæum which arises from the middle of the dorsal wall and passes to the posterior border of the upright stomach, was named by Mueller, the mesogaster. When the mesogaster arrives at the stomach, its two blades diverge to receive it and then pass forward on the right and left sides of the stomach until they arrive at the anterior or lesser curvature, after which the two blades of peritonæum again come together and pass to the liver. The part of the double peritoneal membrane stretching from the stomach should be named the anterior mesogaster, but anatomists call it the gastro-hepatic omentum. After clearly recognizing that the posterior mesogaster (great omentum) is the mesentery of the stomach or the double-bladed membrane stretching from its origin, the middle of the dorsal wall, to the posterior border of the stomach and that the anterior mesogaster (lesser omentum) is the double-bladed peritoneal fold which extends from the transverse fissure of the liver to the lesser curvature of the stomach, the story of the formation of the great omentum is simplified.

In the second month of foetal life the stomach makes three movements: (*a*) It rotates from left to right, (*b*) it twists on its axis, and (*c*) it descends lower into the abdominal cavity. The result of the three movements is (*a*) the right surface of the stomach becomes posterior and the left anterior and (*b*) the stomach assumes a horizontal position or rather the pylorus is carried backward. As the stomach passes through these movements the greater curvature is carried to the left and forward so that the mesogaster must necessarily elongate. The mesogaster elongates by moving toward the left and in so doing it creates at first, a wide, shallow depression behind the stomach. As the stomach completes its rotating and twisting the shallow depression behind the stomach becomes deeper and the circumference of its mouth becomes narrower until, finally, in the fourth month the depression becomes the lesser bag of omentum and its mouth becomes the foramen of Winslow (foramen epiploön), to use Johannes Mueller's words, from his original article in 1830, "Diese Beobachtung ist neu, und mir eigen; sie ist, wie ich glaube, der Schlüssel zur Bildungsgeschichte des grossen Netzes." ("This observation is new and my own; it is, as I believe, the key to the development of the great omentum.")

Now, since the mesogaster arises from the middle line of the dorsum and reaches around to the greater curvature of the stomach, there will exist behind the stomach a space or sac made by the folds of the elongated mesogastrium. In order to reach from the mid-dorsal line to the greater curvature of the stomach the mesogaster must needs stretch very much. The bag found behind the stomach gradually assumes such a position that the mouth opens just at the right of the vertebral column at the point known as Winslow's foramen. Winslow's foramen should open in the middle line, but the liver (enormously large in embryos) atrophies rapidly and drags it to the right over the spinal column. Winslow's foramen opens at the lower part of the lesser curvature of the stomach. Now the anterior wall of the lesser omental cavity is the stomach itself, while the posterior wall is the mesogaster itself. This aperture, Winslow's foramen, is the narrow neck leading to a wide bag of peritonæum lying behind the stomach, known generally as the lesser omental cavity. The neck or foramen is at first simply a wide depression in the mesogaster, but gradually the bag narrows at its neck, until it admits one to three finger tips in the adult.

It should be noted that the mesogastrium and mesenterium of the duodenum are one and the same thing; that the mesogaster ceases when the mesentery begins. In early embryos this is at the pylorus,

but in adults it is at the junction of the duodenum and jejunum. In between the stomach and jejunum there is a piece of bowel in adults without a mesentery, lying behind the peritonæum. It is the duodenum, however, in embryos, in the lower animals the duodenum has a long mesentery.

The notable feature in development of the great omentum and colon is that they remain a long time without any relation or contact. But the more the colon bends and fixes itself in a higher position the more the great omentum assumes a bag-like form. At this time (say six weeks) the great omentum (mesogaster) assumes an oblique insertion and the mesentery of the colon also assumes an oblique or transverse insertion. The two more and more approach each other until the great omentum passes directly from the greater curvature of the stomach to the transverse colon. It has been asserted and reasserted that there is a coalescence or an absorption of some of the layers of the great omentum in order to produce the condition found in adults. I shall attempt to show, both by embryos and especially by the dog, that this is not the case, but that the whole matter concerning the relations of the great omentum and the transverse colon is brought about by a readjustment of parts. Certain organs in developing and assuming their positions appropriate portions of peritonæum, while others give up some peritonæum. It will be observed in both embryos and dogs that the final adjustment of the great omentum to the transverse colon in the adult begins at the right end of the transverse colon and progresses toward the left. The credit of announcing just how the omentum and transverse colon coalesced, Mueller gives to Meckel. Many ideas of the peritonæum and its folds have been copied without the slightest recognition of the labors of Meckel and Mueller. But right here it would seem to me to be appropriate to copy the figures which Mueller drew sixty-five years ago to represent the development of the great omentum, a discovery which he says belongs to the industrious Meckel. However circumstances forbid.

I wish to state that I consider Mueller's figures as well as Meckel's views partially wrong. It should be remembered that what is transitional in man's embryo may be permanent in the lower animals. The great natural fact is that man goes through the development, in embryo, of all the animals below him. Hence we must learn the thread of progressive development by the examination, not only of the rapid transitional stages of man's embryo, but of the permanent stages of the lower animals. The dog, for example illustrates

a peculiar permanent condition of a stage of development far below man in two special conditions. One represents the partial rotation of the intestinal canal. The cæcum remains near the navel and does not descend. Another is that the great omentum does not directly insert itself into the colon at all.

In some mammals the omentum will remain bag formed. In others it still remains a part of the original mesentery, *i. e.*, the mesogaster may remain a simple mesentery of the stomach or it may show different degrees of sac formations as dog and man. Also a peculiar point arises that the spleen may be far away from the stomach as in man or directly in contact with the stomach as in embryos and some animals. Again in man one can easily observe that the pancreas is posterior to the peritonæum, but in the dog it is distinctly in the mesentery in contact with the stomach and duodenum. The same may be observed in certain stages of human embryos. Further, the foramen of Winslow is large in human fœtuses, but the same opening in some other animals is hardly an inlet at all, but a wide plane or depression. Hoffman's sloth simply has a wide-mouthed bag for a lesser omental cavity, so that this omentum as found in man is the result of long ages of evolutionary development. But one can observe the evolution of unnumbered ages in nine months of fœtal life. In fact the changes in man during intra uterine life are more wonderful than those after birth.

The following remarks on the abdominal viscera and peritonæum of a fœtus of perhaps four months and a half may be of interest :

Fœtus, male. Five inches long. Fingers and toes distinctly formed. Nails visible. No eyebrows or hair. The external genital organs are just beginning to be distinctly recognizable to decide sex. The raphé is closed. The abdomen is very large on account of the large liver. The liver is almost symmetrical, but still the larger lobe is the right. The umbilical vein being cut, the fold of abdominal wall containing the two hypogastric arteries and the urachus is turned down for the best view.

The testicles are descended to the internal inguinal ring. The right testicle, like the right corner of the uterus, does not descend as fast as the left. The sigmoid flexure is three quarters of an inch long. Its mesentery is directly in the middle line, until it was entirely displaced by the growing kidney. The kidney appropriated all of the mesentery of the descending colon so that the descending colon runs along the outer border of the kidney. The bowel is solidly adherent to the kidney. Then we have no descending meso-colon and the only primitive mesentery left on the large bowel is the sigmoid mes-

entery, which in this fœtus of five inches arises exactly in the middle line of the dorsal abdominal wall. The descending colon is half an inch long. The costo-colic ligament shows distinctly in this fœtus to be the lower left-hand border of the great omentum. The transverse colon is nearly an inch. The omentum is over half an inch from the colon to its lower border. The descending colon is half an inch long. It makes a wide, obtuse angle, unlike the splenic bend, which is a sharp, acute angle. The descending colon runs on the internal border of the kidney and is tightly adherent to the kidney. It has no mesentery. It may be observed that both ascending and descending colons are more fixed and have a shorter mesentery at their upper ends or at their flexures than they have at their lower. A fact which holds good in adults.

The appendix is half an inch long. It runs parallel to the lower end of the ilium. It has a mesentery. It lies in a spiral form and the fold of peritonæum stretches from the ilium on to it at both its sides. It is so small that the superior and inferior ileo-cæcal fossa can not be distinctly marked out. This fœtus shows very clearly that the ascending colon as it descends appropriates the mesoduodenum for its own covering. The descending colon lies for a quarter of an inch against the front surface of the duodenum and at that point has no peritonæum over it, but the peritonæum is used to cover the ascending colon. As the ascending colon descends it drags the right lower omental border with it out into a conical point. Besides the splenic flexure has become also quite firmly fixed into the (costo-colic ligament) left lower border of the great omentum. The gall-bladder is nearly half an inch long. The stomach has assumed an adult condition. The spleen lies against the left end of the stomach. The pancreas can be seen lying in the great omentum, but it is being uncovered by the dragging of the ascending colon.

The lesser omentum stretches from the liver to the stomach. It is a thin transparent membrane, however, of considerable strength. The whole of the small intestines hang on a very narrow neck and the mesentery crosses the vertebral column and great vessels at a very high point, much higher than in adults.

The jejunum is about twice the size of the colon. In this fœtus of five inches the colon does not show a trace of sacculation, or longitudinal bands or appendicæ epiploicæ. In fact the colon throughout its length is in this fœtus the smallest part of the digestive tract. The upper end of the jejunum is three times the size of the colon. The mesogaster inserts itself in the posterior median line.

The small intestine is fifteen inches long. The large is three inches long. It is as one to five, almost adult relations.

This fœtus is five inches long and about four months old. At this age we may note the following points. The ascending and descending colons have no mesentery, the kidney on each side has appropriated it to cover its rapidly increasing volume. The splenic flexure is acute as it is in adults. The transverse meso-colon is four fifths of an inch. The hepatic angle is obtuse and the cæcum has descended to the lower border of the left kidney. The colon has no sacculations, bands or appendices epiploicæ. The colon is the smallest part of the digestive tract. The omenta (gastro-hepatic, gastro-colic and gastro-splenic) are definitely formed. A very curious matter in the small intestine of this fœtus is that at some six inches below the beginning of the jejunum the gut widens and retains a large caliber up to three inches from the cæcum, when it rapidly narrows. The liver has just begun to lose its symmetry and is perceptibly large in the right lobe. The point where the round (hepatic) ligament of the liver comes out between the two lobes is exactly at the level of the umbilicus and before the liver begins to perceptibly shrink in one lobe this point extends below the navel. A peculiar, but general feature of the fœtus is, that the descending colon, is, at four months always at the left border of the kidney and with no mesentery, while the ascending colon is at the left border of the right kidney. However, I posted an adult in which the ascending colon lay on the left border of the right kidney, but no doubt that was a fœtal type. The duodenum is being deprived of its mesentery by the ascending colon. The appendix is rapidly approaching adult conditions. The kidney is half an inch long. The mesentery has a higher position than in the adult. The hepato-duodenal ligament is large and prominent. No trace of the fossa duodeno-jejunalis can be made out. The sigmoid mesentery arises directly from the middle line and it is broken by the kidney stealing away the mesentery of the descending colon. No under sigmoid fossa can be found. The abdomen was fully closed at the navel. The rotation of the digestive tract is almost completed. There is no trace of Meckel's diverticulum. The urachus rapidly tapers from the bladder and is quickly lost between the two hypogastric arteries.

THE VALUE OF PLASTIC WORK IN OPERATIONS INVOLVING THE PERITONÆUM.*

BY J. W. LONG, M. D., RICHMOND, VA.,

Professor of Gynæcology and Pædiatry in the Medical College of Virginia ; Gynæcologist to the Hospital of the Medical College of Virginia ; Fellow of the Southern Surgical and Gynæcological Association ; the American Association of Gynæcologists and Obstetricians ; Richmond Academy of Medicine ; etc.; etc.

The three essentials in successful abdominal work are (1) *asepsis* ; (2) *hæmostasis* ; and (3) *plastic work*. We will consider only the last, noticing the first two merely as they are related to plastic work. I think, however, it can be clearly shown that plastic work contributes materially to both asepsis and hæmostasis.

In health the peritonæum offers a smooth external surface, so that the viscera may move easily and without friction upon each other. This is due (1) to the anatomy of the peritonæum, being covered as it is with endothelial cells ; and (2) to the serous secretion, which is just sufficient to keep the membrane moist. This membrane has two functions which stand out pre-eminently, (1) the *absorption* of any fluids that may be poured into its cavity ; (2) the formation of *plastic lymph*, producing adhesions. The first is, of course, an effort on the part of the peritonæum to carry away deleterious matter. The second is also an effort of Nature, and under certain conditions is a life-saving process. Take for example a case of perforative appendicitis. The appendix is inflamed, ulceration begins from the inner side of the appendix ; long before the perforation has reached the cavity of the peritonæum, the peritonæum throws out plastic material forming limiting adhesions, restraining and circumscribing the infectious matter, which is poured out through the perforation. The same is true of salpingitis. As soon as the tube is infected, the peritoneal coat of the fimbriated end begins to swell and soon closes the extremity of the tube, thus sealing the tube and preventing the infectious matter from reaching the peritonæum by this channel.

So then this plastic exudation should not be considered pathological, even though we grant that it never occurs in a state of health, but only when some morbid process is present. The abdominal sur-

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geon should ever bear this valuable and to me wonderful property of the peritonæum in mind.

But often this very conservative effort of Nature is perverted into a pathological condition, such for instance are the adhesions forming after abdominal section. These adhesions are hurtful in that they may produce (1) painful peristalsis; (2) constant pain; or even (3) ileus. So common is it for adhesions to form after an abdominal section, that the *American Text-Book of Gynecology* says, that they always occur.

The occurrence of adhesions was forcibly impressed on my mind in the case of a negro woman, from whom I removed an intraligamentous growth. After hulling out the tumor, the bed seemed clean

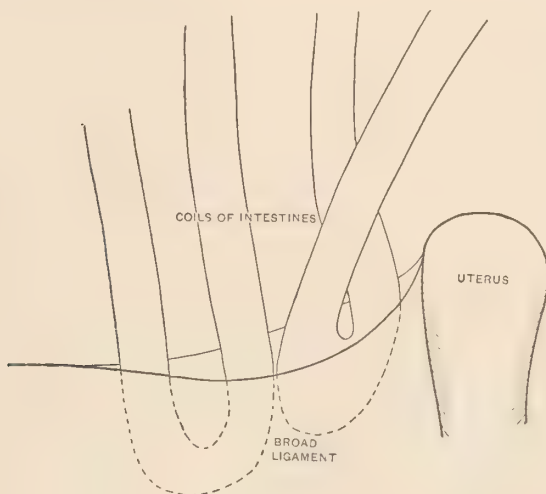


FIG. I.

and free from hæmorrhage and I did not regard it necessary to close the parts. Four days after the operation I was compelled to reopen the abdomen, because of a leaking intestinal wound, when I found that coils of small intestine had fallen down into the cavity from which I had removed the tumor, and were densely adherent. Had I taken the precaution to bring the edges of the ligamentous wound together, the intestines could not have got into the place.

Adhesions sometimes form at a *very limited point* that is not covered by peritonæum. I recall an instance of this kind in a case where I assisted my colleague, Dr. Johnston, to do a secondary abdominal

section on a young lady, whose tubes and ovaries had been removed by another surgeon, because of epilepsy occurring at the time of her periods. The first operation had been done by a skillful surgeon, but her periods and the epileptic seizures continued and the woman's mind was rapidly becoming a blank. Dr. Johnston opened the abdomen and found that the former operation had been a very clean and

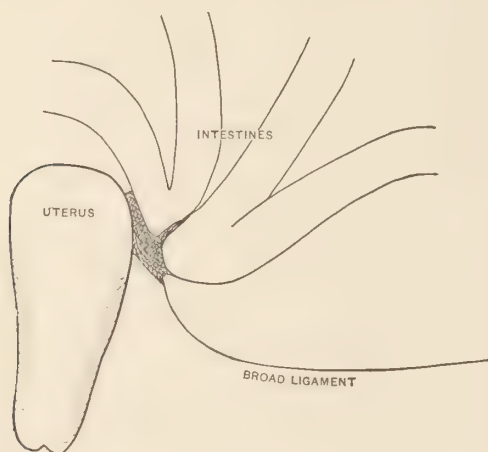


FIG. 2.

perfect one and the only pathological lesion to be found was the adhesion of two coils of intestines to the stump of the right tube.

These he carefully freed, covered the abraded surfaces of the intestine, touched the stump of the tube with the Paquelin cautery, and closed the abdomen without drainage. This case made a rapid and perfect recovery; the periods ceasing, the seizures not returning, and her mind rapidly regaining its equilibrium. True this case is not an ordinary one; the adhesions produced a reflex of a very exaggerated nature, but it serves to illustrate the fact that a raw surface, ever so small, inside the peritoneal cavity, may cause adhesions, which are very detrimental to health.

The ideal condition in which to leave the peritonæum after an abdominal section is an *unbroken endothelial surface*. For it is to be remembered that even an abrasion of the endothelial layer, invites the formation of adhesions. Much greater then is the danger of adhesions when the deeper coats, or even the entire thickness of the membrane, are destroyed. It is also worthy of note, that while two normal

surfaces of peritonæum can never unite, it requires that only one of the contiguous surfaces be abraded or injured to set up an adhesive inflammation.

From these facts we learn two important lessons: (1) the readiness of the peritonæum to form *protective adhesions*; (2) the liability of the abraded or torn peritonæum to cause *adhesions that are harmful*.

The first of these is an effort of Nature, and is conservative, the second is pathological and is always deleterious.

To prevent the pathological effects of the second, we utilize the protective influences of the first. This is done in many ways. For instance, no surgeon would close the abdomen and leave a rent in the parietal or visceral peritonæum. He would carefully suture the edges of the rent together, knowing full well that if he did not adhesions of a dangerous, if not fatal, nature would result.

In the now popular operation of *supravaginal hysterectomy* by the intraperitoneal method, one of the essential steps in the operation, is to carefully suture the peritoneal flaps together.

In looking down into such a pelvis, we see only the bladder in front, the rectum behind, and the whole covered by one unbroken peritoneal membrane, save a transverse row of sutures, holding the flaps in position.

In these cases when the peritoneal flaps are short, I have even pulled down the posterior wall of the bladder to assist in covering the cervical stump.

When removing densely adherent appendages, it often happens that deeply abraded surfaces are exposed. It is imperative that they be dealt with in one of two ways—either they must be drained, or covered in such a manner as to prevent adhesions.

It has been my practice, as far as possible, to cover these abraded surfaces with healthy peritonæum. This can not always be done. But the peritonæum covering the lateral walls of the pelvis is rather loosely attached to the underlying tissues and may be made to cover adjacent surfaces. Of course, if the case is septic, no amount of plastic work, however beneficial, can do away with the necessity of drainage. Not only do we lay bare these abraded surfaces in the removal of adherent pelvic masses, but sometimes the peritonæum is stripped

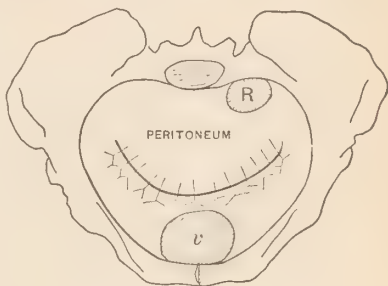


FIG. 3.

up from the walls of the pelvis and important structures, such as the iliac vessels and ureters are uncovered.

A little plastic surgery will remedy both the abrasion and the tear. By means of a sharply curved needle, armed with a carrier a (hospital) No. 2 silk suture catches up the non-abraded edge of the rent, then skipping over the abraded surface, picks up the normal peritonæum.

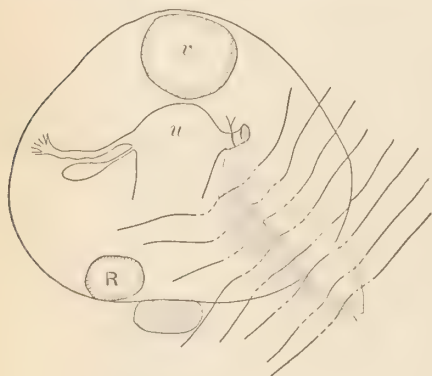


FIG. 4.

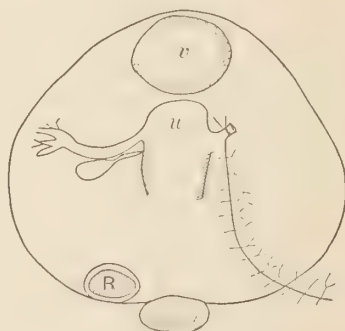


FIG. 5.

This suture may be continuous or interrupted. A reference to Figs. 4 and 5 will show how the rent is closed and the abrasion covered by the same procedure.

The principle advocated then, of covering all raw and torn surface with normal peritonæum, whenever practicable, to prevent harmful adhesions is susceptible of wide application, but need not be further elaborated in this connection.

Plastic work is of unquestionable value in *wounds of the abdominal viscera*, and in *anastomotic operations*. The principle is the same in both instances; *i. e.*, to bring peritonæum against peritonæum, when the plastic lymph quickly seals the wound in the viscus.

It will be understood that I speak now only of the part which the peritonæum plays in these plastic operations, and do not consider the other very important and essential factor, namely approximation of the deeper structure of the viscera. Indeed, in some instances it is necessary to bring together only the peritoneal coat; as for example in *cholecystenterostomy*.

Dr. Murphy has shown that a peritoneal adhesion one line wide is all sufficient to maintain the anastomosis.

But the value of this procedure for wounds and anastomoses is so

obvious that it is trespassing on your time to dwell longer on this point.

As an *hæmostatic measure*, plastic procedures are of undoubted value. All raw or torn surfaces bleed or ooze, more or less. To cover such surfaces with normal peritonæum, is to restrain the bleeding and protect the abdominal cavity from the presence of serum. The instances already cited when discussing adhesions, might also be used to illustrate this point; therefore I will notice only one other. In vaginal hysterectomy, as soon as Douglas' *cul-de-sac* is opened, it is important that the serosa, and vaginal mucosa be sutured together in order to restrain all bleeding. The same should be done in front when the utero-vesical fold is opened. When the operation is completed properly, there is no raw surface left uncovered, hence no hæmorrhage can occur. It must not be understood that under any circumstances is it intended for plastic work to take the place of thoroughly ligating all bleeding vessels.

Plastic work is also of great service as an *aseptic measure*, because it has been clearly shown that pathogenic germs increase more rapidly when the peritonæum is unable to absorb the liquids which are poured into its cavity. In other words, they flourish more abundantly in a moist than in a dry field. Hence if by plastic work we leave only normal peritoneal surfaces in the abdominal cavity, we not only have the best possible conditions for absorption, but we lessen the amount of the hæmorrhage and serous exudation and rob any infectious germs, which by chance may have found their way into the peritoneal cavity, of the pabulum that is conducive to their development.

We may sum up the ideas which have been so imperfectly presented in this paper, by saying that plastic work is of value in peritoneal operations :

1. Because it prevents pathological adhesions.
 2. Because it induces protective adhesions.
 3. Because it is an hæmostatic measure.
 4. Because it promotes asepsis.
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UTERINE FIBROIDS. HYSTERECTOMY. TREATMENT OF THE PEDICLE.*

BY A. H. CORDIER, M. D., KANSAS CITY, MO.,

Lecturer on Abdominal Surgery, Kansas City Medical College.

As we learn more and more of the pathology of uterine fibroids, we limit the application of the removal of the appendages (Tait's operation) to relieve the symptoms produced by their presence, and to check their further development. The pathologist and clinician have repeatedly demonstrated that it is of not infrequent occurrence for fibroid tumors to undergo sarcomatous degeneration. This is especially true of that form of uterine neoplasm known as a fibro-myoma, or as Mr. Tait terms them, myomata. This form of growth develops like sarcoma, at any age, but is most likely to appear before the age of thirty, and is usually a single growth, soft, semi-fluctuating, rapid in its development, and unattended by the usual hemorrhages so often accompanying the multinodular or hard fibroid. These growths (myomata) do not cease their development at or after the menopause, but may grow with increased rapidity after this period is past. They are liable to undergo mucoid, colloid or sarcomatous degeneration. They are composed principally of muscular tissue. They may grow rapidly for a few months, then remain quiescent for a number of years, start up from their lethargy and develop rapidly. Owing to the rich blood supply of this form of uterine tumor they are not as likely to suppurate as the hard, compact, fibrous growths, but let this nourishment be cut off by the ligation of the vessels leading to it (Tait's operation) or the ligation of uterine from below (Dorsett-Martin operation) and the danger from necrosis is real, not imaginary. Any small tumor of the uterus may become an enormous growth filling the abdomen, hence all small tumors that show a disposition to become steadily larger should be dealt with surgically. Electricity, ergot, etc., are agents that have been tried and discarded in most instances for some procedure that is reasonably certain in its results, and that is some form of surgical operation, removal being by far the most exact, and in the aggregate, safest.

Chicago-St. Louis has given us a new procedure (ligation of the

* Read by title before the Mississippi Valley Medical Association, at Hot Springs, Ark., November 20, 1894.

uterine arteries *per vaginam*) that to the unwary and inexperienced seems reasonable, safe and certain, but to one who understands the pathology and clinical behavior of these growths, the Dorsett-Martin operation is a most inexact, dangerous and incomplete piece of surgery. The blood supply is not alone the sole supporter of the growth and development of any structure, and this is as true of uterine growths, as of any other part of the body. The nerve supply is of much import to the vitality of any structure, and in the uterus, Mr. Tait long since called attention to the necessity of the ligature including a nerve (Johnson's nerve) near the cornu in the broad ligament, in order that the menopause be completely brought about. Some one up in the Northwest, recognizing this fact, ligated both uterine arteries, then opened the abdomen and ligated both ovarian and included this nerve (?) and his case was a success, as the growth ceased its development, as did the woman her earthly existence. Uterus sloughed.

The appendages have been found diseased in my cases with a frequency to warrant the conclusion that there exists a causal relation between inflammatory diseases of the appendages and the development of uterine fibroids. If this fact is recognized by the surgeon, I am sure he would be neglectful of his duty, and unsurgical in his methods should he resort to any procedure that had not for its object the removal of the diseased appendages, breaking up of adhesions, the liberating of sound imprisoned surrounding organs, and the removal of the growth, if large or of that variety liable to continue its growth after the appendages are removed.

Many growths produce by their presence, pressure on the bladder, rectum and ureter. Such a growth should always be removed by the surgeon, and not left for Nature to absorb (?) or for its presence to produce irreparable injury to surrounding organs.

I do not desire to be misunderstood in my position as regards the removal of these growths. I would not operate on dying patients, because they will continue to die in spite of the surgery, and not as a result of the surgery. Operations on dying people bring reproach to this class of life-saving work.

I mention this fact to impress some one, possibly, who may hear this read or see it in print, of the necessity of early surgery in all cases where past experience has demonstrated that at some time in the progress of any given case surgery becomes necessary in order to save the life of the sufferer. Early surgery means completed and satisfactory work. I am no advocate of abandoning a procedure when once begun, for any surgical operation that is done in an imperfect

manner must of necessity, in most instances, beget disaster and disappointment.

The operation of Mr. Tait is applicable to a few cases, to check hæmorrhages and cause the growth to cease its development. The growth must be small, of the hard variety, and in a patient near the natural menopause, and unaccompanied by any polypoid growths within the uterine cavity. Enucleation is applicable in a very limited degree to small, single, hard fibroids in the front wall of the uterus. The appendages must be normal, or should be removed at the same time. Any extensive enucleation is attended with more danger than a hysterectomy, and leaves behind a poor piece of surgery, and a useless uterus, in most instances. It is possible for some fibroid uteri to become impregnated, and a recognition of this fact should form an operative indication, in these cases, for the mortality to both child and mother is very high.

We have arrived at a period in the history of pelvic surgery where we can not yield to the plea for *ideal surgery*, as far as a theory is concerned, but must submit to the more intelligent entreaty for good results and low rates of mortality—really the goal of truly ideal surgery. If a skilled operator has a preference, or is partial to a particular method, he is certainly entitled to do his favorite operation, provided his results are equally as good as those of others doing the same work in another way. If a large series of cases be reported with a mortality of five per cent. after a given method by one surgeon, and on comparing this percentage with the work of another doing the operation with some modifications, you find a death-rate of twenty per cent., you may rest assured that the fault, in the majority of instances, will not be found in the operator so much as in the faulty principles underlying the procedure of his choice. I find many operators who are constantly changing their technique, trying a new stitch here, and a buried ligature there; or a different instrument is applied, all, possibly, at the expense of the abandoning of an old, faithful and efficient procedure. Usually the old have been abused, hence the seeking of something new to try. All that is necessary, in the majority of instances, for a procedure to receive their unqualified indorsement, is a foreign stamp, or a so-called conservative imprint by some illustrious and superannuated book writer, or professor. Unfortunately, the outlines of much abdominal surgery are mapped out by turning a revolving bookcase, while the topography is dictated to the office stenographer.

The surgery of some abdominal operators reminds me very much of the rapid transformation of a piece of butcher's meat, in an aver-

age boarding-house—roast to-day, soup to-morrow, and hash the next day, not recognizable at all; a species of surgical omelet, so to speak. While my comparison may seem a little absurd to some of my hearers, I am sure others will agree with me, in the main. I am fully in accord with any surgical advances, but do not believe in abandoning a good procedure, one that is all that could be desired, for an uncertainty.

Péan's method being the one of my choice is one I shall describe in full. Mr. Tait, Drs. Price, Bantock, Keith and McMurtry all perform the Péan operation.

Operation.—The preparation of the patient for a suprapubic hysterectomy is one of much import, and too much care and attention can not be given the details of the same. Cleanliness should be the watchword, and the eyes of the operator the sentinel, that no unclean nurse, sponge, instrument, or assistant, cross the aseptic halo.

A larger number of instruments are necessary in doing a supravaginal hysterectomy than is required in an ordinary "section." The operation itself demands a variety of instruments, and to be ready to meet unexpected complications requires more to be added to the list—one dozen hæmostats, two hysterectomy pins, Koeberlé *serre-nœud*, with delta metal wire, (this wire may be obtained from Krohne & Sessemann, London,) an extra Koeberlé, in case of a break, should be on hand, a knife for the abdominal wound, a large scalpel to cut away the tumor, four large tissue forceps to clamp the broad ligaments while making the pedicle, strong straight needles to sew the abdominal incision; silkworm-gut sutures, silk two sizes, for ligatures—bladder and intestinal injuries require a fine silk suture—a strong, straight needle to sew through the pedicle to reduce its size and keep the peritonæum from retracting; large flat sponges, smaller round sponges; irrigator, drainage-tubes, piston syringe to empty tubes; dressing material, iodoform gauze, etc. I prefer ether as an anæsthetic in all abdominal operations.

Time is an important item in the performance of a hysterectomy and the operator who recognizes this, and completes his work quickly will, everything else being equal, have the lowest mortality.

The abdominal incision should be (to begin with) a little nearer to the umbilicus than is usually made in a "section" for the removal of diseased appendages. This precaution is made necessary to avoid wounding the bladder in the first incision, as this viscus is frequently pulled up by the growth of the tumor. Having entered the peritoneal cavity and settled the error or correctness of the diag-

nosis, proceed to sweep the fingers or the whole hand over the growth, going first above, then to either side, finally examining very closely for the location of the bladder; satisfying yourself that the growth can be removed (it is very rarely that one can not be removed) your incision is carried downward to the full limit of safety, and if need be, upward above the umbilicus. The growth is now brought forward through the abdominal opening. If omental adhesions are present they are "sponged" off, or double-ligated, and cut until freed from the growth. In delivering the growth be careful that no undue force is used with the fingers in the region of the broad ligaments, where you will find enormously enlarged and tortuous blood-vessels. The same precautions should be exercised posteriorly, for here in many cases you will find large and vascular adhesions, which if torn across bleed profusely, and are found and ligated with difficulty.

In the globular œdematous myomas you will often find that it is with much difficulty that they can be removed from their snugly fitting pelvic mold. They can be easily dislodged if you can succeed in getting air to the bottom of the pelvis by pressing the finger or a clean catheter alongside of the tumor to the bottom of the pelvis. If you fail in this, then the corkscrew of Mr. Tait will be of much assistance to you. This instrument is screwed into the "fundus" of the growth, and traction made slowly and steadily until the tumor is delivered. Examine again closely for the location of the bladder, which is usually marked by a difference in color and the course of blood-vessels, and a faint line may be seen marking its limit when made out. If still in doubt, have an assistant quickly introduce a catheter, and its limit is then easily made out. If the bladder is pulled up too high to admit of the wire being applied, carefully dissect it from the walls of the tumor, and permit it to drop out of the way. If the pedicle is small the wire can now be applied, the pins having been placed in position before the wire is tightened. The pins should be placed parallel and exactly across the abdominal incision and on a level with the surface of the body.

If the pedicle is too large to admit of being constricted by the wire and fastened in the lower angle of the wound, pass a large tissue forceps on either side on broad ligaments, two to each ligament, and cut between them down to the tumor, and from side to side in front and behind, having previously caught the peritonæum with hæmostats, in many places around the tumor, just below the proposed line of incision in the capsule, and *above the bladder attachment*. This last pre-

caution guards the bladder and prevents the peritonæum and capsule retracting beyond the proposed location of the wire. Having divided the capsule, rapidly dissect it down to just above the location to which the wire is to be placed. You have almost practically enucleated the tumor, and have reduced the pedicle from the size of the thigh to that of the wrist, and that, too, with very little loss of blood and time. The pins are now pushed through the capsule and tumor, and the wire tightened by the nœud and the remains of the tumor and capsule are cut away an inch from the pins, and the wire tightened again until all oozing stops. At that stage of the operation when the tumor is delivered, a large flat sponge should be placed over the intestines, and two or three sutures passed through the parietes and grasped by heavy forceps and crossed over the line of the incision. This protects the intestines, and keeps them in place.

The hæmorrhage being controlled by the wire, the cavity of the cervical canal is cleansed, and a piece of gauze packed in it to prevent infecting the peritonæum during the completion of the operation. The peritonæum is washed or cleaned by sponging, if it needs it, especial care being given the location of the bladder, as here blood-clots are liable to be left behind. Two strong strings are placed around the pins to be used in pulling the stump into the lower angle of the incision, and to hold it steady while the *peritonæum is being stitched to the pedicle below the wire*. Fine antiseptic silk is used for the sewing.

Union takes place quickly between the parietal and pedicle peritonæum, and soon seals that cavity from any outside source of infection. You now introduce your sutures, then remove the large flat sponge and irrigate or clean out the recesses of the peritonæum, especially the pelvis, and, if the tumor is a large one, in the "flanks" also. Silkworm-gut sutures should be used in closing the abdominal incision. You now take a strong, straight needle, armed with stout silk, and sew back and forth through the pedicle to reduce its size, to aid in controlling hæmorrhages, should the wire break during your absence, and to prevent the peritonæum retracting below the wire (not likely to occur) and to reduce the size of the stump.

A drainage-tube can be used if the usual indications for its use are present, such as oozing from adhesions, free fluid in the peritonæum at the time of the operation, or escape of pus from a pyosalpinx. (A complication of frequent occurrence in fibroids of the uterus.)

Care must be exercised in approximating the cut surfaces about the pedicle, for fear too much tension is placed on the integument

surrounding the stump and cause stretching of the skin. Pledgets of iodoform gauze are applied under the edges of the stump and under the pins to prevent pressure on the skin, and the stump is covered with iodoform to hasten the drying process. The usual dressing should be applied with gauze, and the many-tailed bandage. The Koeberlé is permitted to project from the dressings that it may be tightened as often as may be necessary without disturbing the patient or her dressings.

If the pedicle is a large one, the dressings will soon be soiled by the discharge. *There should not be a large one.* The nurse is instructed how to tighten the wire if oozing of blood is detected. The wire is tightered by a turn or two of the clamp each day until the stump drops off, which usually occurs from the eighth to the twentieth day. The dressings are changed as often as it is necessary. Every aseptic precaution should be carried out in its fullest detail in doing the operation, and in the treatment of the pedicle afterward. If suppuration about the stump takes place, it is due to want of aseptic care on the part of the surgeon or nurse. If this accident has occurred it is best treated by keeping the groove around the stump lightly packed with iodoform gauze saturated with pure listerine or campho-phenique. After the pedicle drops there remains a shallow cavity that is soon filled up by healthy aseptic granulation tissue.

This description of the technique of a supravaginal or suprapubic hysterectomy is one applicable to all uncomplicated cases. The inventive ingenuity of the surgeon will find here a broad field in which to extend in meeting unlooked-for complications.

If I have succeeded in making the various steps of this, the choice operation for the removal of uterine myomata, clear and plain to those unacquainted with its technique, the object of writing this paper has been attained, and my desire gratified.

I beg to submit to your consideration the following deductions :

1. All rapidly growing fibroids of the uterus should be removed.
2. Procrastination, tinkering, and electrical darts convert many a simple case into one of great magnitude, with many complications, making the work of the operator very difficult, and hazardous to the patient.
3. Small, stationary, hard fibroids, without dangerous symptoms, may with safety be allowed to remain, especially in women nearing the menopause.
4. Rapidly growing œdematous myomas may not present any dangerous symptoms, may occur at any age, may and do continue to grow

after the climacteric, removal of the appendages does not check their growth.

5. (Edematous myomas should be removed by a hysterectomy as the entire uterus will usually be found taken up in the body of the neoplasm.

6. Fibroids undergoing mucoid or colloid degeneration should be removed by a hysterectomy.

7. Suppurating fibroids, when not extruded into the vagina, should be removed by a hysterectomy.

8. Pediculated fibroids, if the pedicle is small, may be removed with safety by taking all due precautions to guard against hæmorrhage.

9. All hysterectomies (with Dr. Price's qualification) should get well.

10. Oophorectomy or salpingo-oophorectomy, as a means of relief for tumors of the uterus is being more and more limited in its sphere by a more thorough understanding of the nature of these growths.

11. Medicinal agents and electricity may in many instances relieve the symptoms for a short time, but the uncertainty and the dangers attending their use more than outweigh the expectations for good.

12. The operation of Bantock as described is quick, safe, efficient and is followed by the lowest mortality.

13. The liability to post-operative hernia is not increased by the ventral-fixation method.

14. The convalescence is of very little if any longer duration than that following the other procedures.

15. The "drag on the pedicle" and unsightly cicatrix are objections raised by some to the wire method, that disappear after a short time and *actual experience* in handling these cases.

16. The suppuration about the pedicle so much dreaded by those who have never performed the operation, is an objection that is easily set aside in the face of a recognition of the fact that when it does occur it never kills and that the same objection may with justice be raised against the other procedure—i. e., suppuration in the vaginal vault.

17. Fistulæ in the Bantock operation are of rare occurrence and are due in most instances to a faulty technique during the operation or want of surgical cleanliness and good judgment in managing the case afterward.

18. In the Bantock operation there is less danger of ureteral and

bladder injuries, the dangers from sepsis are reduced, the likelihood of secondary hæmorrhage minimized and time of operative procedure shortened.

OPIUM IN GYNÆCOLOGY.*

BY JOSEPH PRICE, M. D.

The medical profession has always been responsible for the opium habit of patients or the laity. The reckless and indiscriminate use of anodynes and narcotics, generally used for the treatment of symptoms—rarely does the routine practitioner make a precise diagnosis, before giving opium if pain is present. Opiates are commonly used without a clear recognition of an indication except that of pain. The opium habit is rarely acquired, except it be antedated by pain or an illness for which some doctor has given morphine or some preparation of opium. There is scarcely a remedy in the Pharmacopœia used so recklessly and ignorantly and none doing more general mischief—it has always done thrice more harm than good. In the general practice of medicine some of the preparations of opium are to be found in about every prescription. The hypodermic syringe has made thousands of morphine habitués, either with the syringe or without it with the powder. The abuse of the drug is much more common in some States than in others. The influence or impress of certain teachers of therapeutics, has been wide in certain sections. The very common remark of teachers, "Gentlemen it is your mission to relieve pain and suffering," has done a world of mischief. Many of them spend days talking over the numerous preparations of opium without an allusion to the importance of an accurate knowledge of pathology and diagnosis. The growth of the poppy in North Carolina is to be lamented, it will do just what it has done for China—decimated a great people.

While a student of medicine we were taught the use of opium throughout the treatment of about every disease. In many of the hospitals Dover's powders were dubbed "dozing powders" and begged for nightly. Many patients purchased hypodermics immediately on their discharge from the hospital. The abuse of morphine with the hypodermic, has resulted in two great evils, an habitué,

* Read before the Philadelphia Obstetrical Society, January 3, 1895.

and the mercenary use of the drug, the unfortunate patient the prey. Now daily at eight o'clock I see a physician drive to a house to give a hypodermic, the visit is made twice or thrice daily at fixed hours, to repeat the injections, not for malignancy. It is a common thing for physicians to visit patients regularly for the specific purpose of giving a hypodermic. Again without an effort to determine the nature of the trouble, or cure the patient with well-applied treatment. It is in surgery and nervous disturbances that opium and patients have been most abused. But few physicians re-educate themselves, the few that have successfully tried it, realize the great importance of deviating from the routine methods of practice, still commonly taught. It is to be hoped that the more scientific schools of the day, will recognize the great evil.

The comfort of patients throughout their convalescence in abdominal surgery has been so gratifying and pleasing without the use of opiates in any form that I constantly take pleasure in exhibiting patients to visitors and pupils and directing their attention to the total absence of all the uncomfortable symptoms following its use.

The management of all surgical cases is easy and the convalescence more satisfactory and speedy when opium preparations are not used. I am satisfied that the use of opium in some form, either by injection suppository or solution, has been largely responsible for much of the high mortality in abdominal surgery. I rejoice I have never used it in abdominal work except where cancer existed. I have watched the work of others and compared the mortality of the operators who use it with that of those who reject it—all that condemn it head the list with a low mortality. It is simply cruel and unkind to use opium in abdominal surgery. The use and abuse of it before painful troubles are removed obscures symptoms, impairs nutrition and greatly complicates the management of the patient. Without opiates the patient co-operates, the pain lasts only a few hours in all abdominal and pelvic operations.

The numerous uncomfortable conditions favored by opium are wholly absent without it.

The surgical profession should make an earnest effort to withhold opiates before discussing this subject.

We can justly speak of the opium or morphine habit as that of the profession, not of the patient.

The following report of four instructive cases will illustrate most beautifully the successful management of four typical cases of acute angry and general peritonitis, a painful trouble, one always treated by

opiates and rarely successful, quite universally admitted a fatal disease :

CASE I. *October 13, 1894.*—Mrs. A. F., aged twenty-five years, acute general peritonitis, persistent nausea, distention, general adhesions, bloody serum, lymph and muddy fluid throughout the peritoneal cavity. Freeing of all adhesions, irrigation and glass drainage, followed by speedy recovery.

CASE II. *October 13, 1894.*—Mrs. M. B., aged twenty-three, acute double pyosalpinx with acute general peritonitis. Section irrigation, glass drainage, speedy recovery.

CASE III. *October 17, 1894.*—Mrs. I. C., aged twenty-one years. Acute double pyosalpinx, with general peritonitis. Section removal of suppurating tubes and ovaries, irrigation and drainage, freeing of all adhesions, recovery.

CASE IV. *October 25, 1894.*—Miss J. R., aged twenty years. Acute pyosalpinx, general adhesion and peritonitis. Removal of suppurating tubes and ovaries, unraveling of all adhesions, thorough flushing, glass drainage, recovery.

This was a very angry and ill group of patients. The treatment was rather simple, rapid and thorough. Section, irrigation, drainage, and rest quiet and position, without opium. All varieties of peritonitis have been uniformly and successfully managed by the simple treatment suggested.

MINUTE ON THE DEATH OF DR. WILLIAM GOODELL.*

BY WILLIAM H. PARISH, M. D.

The son of a missionary clergyman, reared under moral and religious influences, educated within the walls of Williams College, William Goodell imbibed as a boy, and possessed as a man, the courage of conviction and the fearlessness of action in the right, which rendered his life as a private man and his career as a physician above the innuendoes of suspicion, and impregnable to the aspersions and the accusations of opposition and envy.

A graduate of Jefferson Medical College, his name belongs in the list of the deservedly eminent men to be found among the alumni of this institution ; and he well merited the graceful compliment of the degree of LL. D. conferred upon him by this his *alma mater*.

* Read before the Philadelphia Obstetrical Society, January 3, 1895.

For years the Professor of Gynæcology in the University of Pennsylvania, he brought to this institution, the pride of American medical colleges, no little additional renown because of his erudition as a scholar, his abilities as an operator, and the forcefulness and the thoroughness of his methods as a teacher. In the medical profession at large, as a gynæcologist and as a learned man, he attained an eminence comparable to that of Atlee or Sims, and not surpassed by that of any of his able collaborators who have survived him in the field of active professional work.

An influential founder of the Philadelphia Obstetrical Society, twice its honored president, and a member who for years contributed very largely to the value of its proceedings, we the members of this Society deeply regret that Dr. Goodell has passed from among us; but we wreath his memory with thoughts of the ripe scholar, the successful surgeon, the graceful writer, the facile speaker, the strong and courteous debater, stronger because courteous, the faithful friend and the honorable man.

CARE OF PATIENTS DURING GESTATION AND CONFINEMENT.*

BY H. L. NEWELL, M. D., PROCTOR, VERMONT.

Pregnancy is one of the most important conditions occurring in the life of woman as well as one which requires and should receive a large share of attention on account of the results which must inevitably follow.

It is not only interesting by reason of the peculiar conditions which arise in the mother, but it possesses a still deeper significance when we stop to consider the new relationship which has sprung up through the presence of a new factor—the child.

The mother is called upon for increased physiological exertion and if her organism is not competent to meet this call the consequence can be little less than disastrous to both herself and child.

If haply the child survives, its delicate organism suffers to such an extent that the lack of proper care during a few months of intra-uterine life may require years after its birth to repair the mischief which has been caused.

* Read before the Vermont State Medical Society, October 12, 1894.

This, and the fact that the mother is so liable to serious gastric, nervous and circulatory as well as mental and moral disturbances render the careful and frequent consideration of this subject of prime importance to the general practitioner.

If opportunity allows, we can do very much by preventing the ills which so many times jeopardize the health and life of both mother and child, but unfortunately in a large percentage of our cases the first time we are consulted is when we are hastily summoned and find our patient in the throes of labor, many times being physically unprepared for this severe ordeal.

Much good would result from helpful advice given, if, as soon as she suspects herself to have conceived she would consult her physician.

Yes, and I will go further and say that it is a debt which parents owe to posterity to see to it that they are physically sound *before* procreating children.

It is a lamentable fact that too little thought and care is exercised regarding this power which they possess.

Is it not a sublime thought that parents are endowed with the physical powers of starting into existence a life which shall possess their likeness which shall be the habitation of the spirit of eternal possibilities in the limitless beyond, which life can not be terminated except by its own volition?

When so much wise, prudent thought and care is increasingly given to the breeding of our domestic animals, is it out of place, is it an innovation that I should call the attention of this learned body, the custodians of the physical weal, of the progenitors of the coming generation? I repeat, is it out of place that your attention should be called to this subject? Is it not time to call a halt? Is it not a duty which we owe to those who look to us for advice and enlightenment to proclaim the importance of sound minds in sound bodies in order to insure strong, vigorous and healthy children?

Nor is this all, for I am persuaded by experience and observation that very much can be done during gestation to modify the mental and moral tendencies of the child to be.

From the earliest conception, the mother should be surrounded by everything to make her life delightful (so far as possible).

Both intellectual and physical work of an agreeable nature are indispensable to the attainment of the highest good to both mother and child.

One writer has said that nine months of prayer by the mother be-

fore the birth of her child was better than nine years of prayer afterward.

If this be so, and who shall deny it, can we not as reasonably expect that the physical and mental tendencies may also be molded, fashioned and tempered in harmony with and partake of similar attributes and distinguishing characteristics possessed by the parents?

For the physical, mental and moral benefit of the mother and child, total abstinence from sexual relations should be observed during the period of gestation and lactation.

We all very well know that it is a physiological fact that when conception occurs Nature, as it were, closes up house to devote all her time and energy to the new life that is being developed and that violation of this natural law results in hysteria with all its attendant troop of ills.

Rightly mated, healthy persons who obey such of God's laws as are now known may rightly expect children of a higher grade and finer and more perfect nature than themselves.

We are all familiar with the causes of morning sickness as generally set forth in our text-books.

I have been led from clinical observation to believe that there are one or more of three factors which *usually* go to make up the sum total the result of which is nausea and vomiting—viz., *constipation* from loss of nerve-energy, *bilious indigestion* which may depend upon and result from the constipation and last but not least *sexual intercourse*.

Kindly but emphatically we must insist upon abstinence from coitus, remove and guard against constipation and help the stomach for a few days with some form of pepsin and a large percentage of our patients will have no more morning sickness. If this advice be thoroughly and constantly followed, we shall avoid or prevent many of the derangements which otherwise are so liable to occur.

Disturbance of circulation during gestation is very common and is due to mechanical pressure of the gravid uterus on the iliac veins resulting in œdema of the abdominal walls vulva and lower extremities being intensified by chlorosis and hydræmia and is frequently associated with venous ectasis.

These symptoms may also be caused or aggravated by a loss of cardiac nerve energy or by enfeebled or weak cardiac muscles.

They will be aggravated also by either functional or organic inactivity of the kidneys and bowels in which case we may get headache, pain in the back of the neck and back, dizziness, nervousness, wakefulness and disturbance of the special senses.

In such cases we are to look out and look sharp for breakers ahead in the form of the much-to-be-dreaded and fearful uræmic convulsions.

Uræmic convulsions and how to prevent them is the principal object for which I have written this paper.

I will undertake to say that without organic or renal heart disease, other things being equal, provided that physicians are given control of cases from the beginning of pregnancy, they are culpable if they allow their patients to have uræmic convulsions.

From my own experience of nearly ten years, which embraces no mean number of cases, I believe this much-to-be-dreaded calamity is pre-eminently preventable.

My first experience with childbed convulsions was just about ten years ago while a student at college.

A young primipara was taken with severe convulsions in the beginning of the first stage of labor.

Her physician was sent for and another one being nearer was also summoned and as I lived next door, I was asked to come in and help control her.

This was my first introduction into the awful presence and reality of the mystery surrounding the lying-in chamber.

Well, gentlemen, you perhaps can appreciate how all the poetry relating to the occasion and appropriate to the time and circumstances did not come to mind. It vanished.

I had grappled with and overcome raving maniacs many times during service in an insane asylum, I had witnessed the delirium of fevers and many surgical operations, had encountered single-handed patients with delirium tremens and those suffering with epileptic seizures and when a boy on my father's farm had met and conquered mad bulls; but this—why my hair went the direction taken by the quills on the back of that irritable and unamiable, rodent quadruped immortalized by Shakespeare.

My young and tender feelings received such an impression as I shall never forget.

With the use of chloroform and instruments the doctors soon delivered the patient of a live child but the convulsions continued and it was only after repeated large doses of chloral and bromides and hypodermics of morphine and later by venesection that the convulsions were controlled.

I remained with the patient the rest of the day and all night and saw that the instructions of the doctors were faithfully followed, the

patient having no more convulsions. I was profoundly impressed and filled with admiration for the wisdom and skill which saved the patient's life and I thought if medical skill can save one after such terrific convulsions how much better it would be if it could prevent them.

And I resolved that I would endeavor to shield my patients from this misfortune and I am thankful to say that I have had but one case in my own practice and this occurred about four days after delivery and was easily controlled, the patient having but one convulsion.

The case was complicated with acute nephritis she having had convulsions at a previous confinement.

The urine of pregnant women should be often examined during the later months as a routine practice, and in cases where we have reason to suspect kidney trouble we should keep a close watch for symptoms as shown by the presence of tube casts or albumen.

A slight amount of albumen may be present during the later months and not cause any symptoms save perhaps slight œdema of the feet nor cause any trouble during or after labor and soon entirely disappear.

We should however be on our guard against possible eclampsia and should prevent mental excitement, indigestion, constipation or exposure to cold.

True, interstitial nephritis is almost always aggravated by pregnancy.

When albuminuria is present early in pregnancy or in large amounts or associated with many tube casts the prognosis is, of course, much graver and the symptoms often severe, anasarca may become general, the urine dark-colored and scanty, nervous symptoms show themselves in headache, vertigo, vomiting with derangements of the special senses, the body exhales a heavy uriniferous odor and if these symptoms be not speedily relieved eclampsia, stupor, coma and death may follow.

In these severer cases we may have to induce premature delivery which we may do with a good hope of saving both mother and child if this is not too long delayed.

After premature labor or delivery these symptoms may all disappear or may go on as chronic nephritis.

Right here, let me say, never inject glycerin to produce premature delivery.

It has been recently found to be dangerous and has several times proved disastrous.

For treatment of these cases I would recommend milk diet or milk with other easily digested food, except in severe cases I would interdict eggs and meat only, if anæmic, some form of iron. My favorite is Blaud's iron.

If plethoric, venesection to relieve immediate symptoms, with restricted diet.

If there is cardiac insufficiency strophanthus with digitalis, diuretics, diaphoretics, hydragogue cathartics like pulverized jalapi comp. Cups followed by mustard and hot fomentations over the kidneys. In short, make all the emunctories of the body which sympathize with the kidneys help to eliminate the waste products and we shall find that the aid we have given them will be gratefully received as evidenced by their renewed activity and functional integrity.

Should eclampsia supervene, either before during or after either premature delivery or labor at term, we must prevent the patient from injuring herself and from lacerating her tongue by inserting the handle of a brush or folded towel between her teeth administer chloroform and a hypodermic of morphine one quarter or even one half grain, and when the patient can swallow give chloral and bromides in full doses and a heaping teaspoonful of compound jalap powder.

If in labor, terminate as quickly as possible without violence.

The chloral and chloroform will usually allow of easy dilatation of the cervix, if not, we can use Barnes's dilators.

We can do podalic version if it can be done easily, if necessary use forceps, if labor is progressing rapidly let it alone.

Much depends now upon the skill of the operator—after the child is born remove the placenta by careful expression at once.

Here let me observe that it is my belief that this act should be accomplished in nearly all, even in normal cases without delay.

It is a very rare exception that ten minutes elapses after the birth of the child before I have the placenta all right, and I have never been troubled with flooding or hour-glass contraction when I was present at the birth of the child.

In multipara I usually give one dose of fluid extract of ergot immediately after delivery of the afterbirth as a safeguard. It is not often required in primipara although I have never seen any harm from its judicious use and I always order a few doses to be given in case of flooding.

But more important than this, we should instruct the attendants if flooding occurs to grasp the womb and hold it firmly for a few minutes.

After delivering the placenta and the careful securing of all the decidua we should hold the womb firmly but gently for a few minutes to secure perfect contraction ; then as soon as the mother is rested a bit and we have in readiness warm blankets we should remove every shred of wet or soiled clothing from the patient and bed replacing with clean warm linen with an antiseptic pad to the vulva and the careful application of the much-abused abdominal bandage.

I believe in the use of the abdominal bandage not because it is always, nor usually, urgently required, but because it affords a great degree of comfort to our patients, and I think it helps to prevent the dilatation of the womb with consequent hæmorrhage.

After a severe instrumental or protracted case I would use antiseptic intra-uterine irrigation.

I am well aware gentlemen that I bring to your attention but little that is new or novel, but it is good for us sometimes to have our minds stirred up by way of remembrance even though our thought does not overleap the ancient landmarks and boundaries set by our fathers.

PUERPERAL CONVULSIONS.*

BY GEORGE DAVENPORT, M. D., EAST RANDOLPH, VERMONT.

This paper I have the honor to present you for discussion at this meeting, is in relation to a formidable disease which attacks the pregnant woman either at, or before, or after the termination of pregnancy. There is so much that might be said on this subject, its ætiology, its symptoms and its treatment, that it becomes positively embarrassing to decide at what point to begin. Consider if you please, the social conditions of the patient. Young, just starting in life. Everything to the eyes of the young people bears a roseate hue. They dwell in blissful ignorance of the dark lowering clouds which are settling nearer and nearer upon them until they are enveloped in the most appalling darkness, it may be of death itself. I say young because almost every case of puerperal convulsions occurs at the birth of the first child. In Dr. Collins' 30 cases 29 were first children. Dr. Merriman had 36 cases of which 28 were first labors. More than two thirds of Dr. Ramsbotham's cases were with first children and we

* Read before the Vermont State Medical Society, Oct. 12, 1894.

know from our own observation that nearly all we have met with were first labors. In a thoughtless moment I promised to prepare a paper on puerperal eclampsia for this meeting; perhaps I did not realize the difficulties to be encountered in trying to harmonize the views of the different authors who have written upon this subject so as to make this a plain practical paper for our mutual benefit. Modern writers devote but little space to the discussion of this subject; they touch it gingerly. When the student has read all, both ancient and modern, he has very much to learn yet, at the bedside of the patient. Dr. Dewees describes three forms or grades of eclampsia, which to my mind, are both truthful and convenient and I propose in this short paper, to present to the Society for discussion, several cases illustrating the different phases of the disease which attacks, and attacks only, the parturient woman; discarding theories and contenting myself with facts. These forms or varieties are 1st The Hysterical, not often seen in the country, 2d The Epileptic, altogether the most common to be met with of any form, and lastly, 3d The Apoplectic, the most fatal of all to the mother, and sometimes I am inclined to think every case fatal, absolutely no recoveries whatever.

My first case was observed on the 4th day of August, 1854. Mrs. D—— aged 16 years, with light complexion, blue eyes, short in stature, plump and well nourished. I never saw before or since a patient with so much œdema. The skin fairly glistened from the “soles of her feet to the crown of her head.” I was called early in the morning and found her quite comfortable with slight labor pains becoming regular. Digital examination disclosed the os uteri soft and dilatable, a head presentation and no indication whatever of any trouble. She was in first-rate spirits, making sport of having a baby when so young. Everything seemed to be going on well until the os was dilated to the size of a quarter of a dollar, when without warning, sport and jollity gave way to shrieks and lamentations, from the first convulsion. All now was terror and confusion; very soon after she had another spasm. In the meantime I procured a piece of soft wood to place between the molar teeth to prevent injury to the tongue. This is not difficult, for at the beginning of every fit the mouth is opened to its utmost extent. Mrs. D—— became entirely unconscious after the first convulsion and remained in that condition from Friday morning until the following Tuesday. Examination showed the labor to be going on normally and as expeditiously as could be expected in a primipara. We sent for the late Dr. C—— as counsel, and while the messenger was gone I took from the arm about 12 ounces of blood. Prof. Bartlett in his

lectures used to say the obstetrician needed but little more in the practice of his art than the lancet and a bottle of morphine. Poor man! how sad to think he died in ignorance of the use of carbolic acid and bichloride in the practice of midwifery! A great difficulty was encountered in my efforts to find a vein,—bear in mind that I was but a tyro in the business,—on account of the prodigious amount of œdema. I could locate the vein only by the sense of touch with the point of my finger. Fortunately I struck it exactly right at a depth of at least one half of an inch. The labor was progressing rapidly and about the time Dr. C—— arrived I delivered her of a fine healthy female child. Dr. C—— immediately gave her one drachm of laudanum. Her tongue by this time had become so swollen from the injury received at the first spasm that we could give her but little medicine afterward. The lips however were often wet with water. I asked the attendant nurses to keep an account of the number of convulsions and they did so until they numbered thirty-eight. On Sunday they lost the tally and they were not recorded after that. She must have been convulsed more than fifty times. The pulse all this time did not exceed 100 per minute and there was but a slight increase of temperature. On Monday a strong mustard paste was applied the entire length of the spine. She regained consciousness the next day Tuesday the 8th. Mrs. D—— was up and about the house as well as usual, when the baby was two weeks old. A prodigious quantity of urine was passed while the œdema remained. She made an uninterrupted recovery. I regard her case as typical of the epileptiform variety of puerperal convulsions. The number of the spasms was certainly extraordinary. No one of the older authors places the number at more than 18. Prof. King mentions the extreme as 30 or about that in any case. Just a word as to the management of such cases: When the head is pressing upon the perinæum and you think the child is about to be born, hold back the head until the fit has passed and the rigid muscles relax, then flex the limbs by the aid of assistants and you can readily deliver without injury to either mother or child.

Case 2.—Mrs. N—— primipara, blue eyes, well nourished. Was called to attend her on one of the coldest nights of a cold Vermont winter, found a head presentation, labor normal not protracted. After the uterus was emptied and before the soiled clothes could be removed she had a severe convulsion, soon followed by another. My first thought was to treat her as Mrs. D—— was treated. I accordingly bled her to the amount of perhaps 16 ounces and gave a full

dose of morphine. The fits did not cease immediately but continued a few hours and she was convulsed altogether ten or twelve times. She was unconscious about twenty-four hours. There was very little œdema. The result was a perfect and rapid recovery. This proved to be of the same type as the first case but much less severe.

Case 3.—Mrs. S—— primipara, light blue eyes, a plump well-nourished person. This was a case unique in my experience. With the very first pain she fell to the floor in a convulsion. She became unconscious and remained in that condition for several hours after the birth of the child, but when the uterus was emptied the convulsions ceased. About eight o'clock the next morning I asked her how she found herself. She replied: "Doctor I just as lief have a baby as not. They told me I should suffer great pain but I haven't had a particle of pain all through it and here is my baby." Every labor pain was accompanied by a spasm. Both mother and child made a speedy recovery. The treatment was bleeding and full doses of morphine. What was the pathology in this case? What destroyed the balance between the nervous and muscular systems? I consider this case a fine specimen of reflex action consequent upon an irritable condition of the uterine nerves. This case as well as the preceding happened in exceedingly cold weather. Dr. Churchill thinks convulsions more apt to occur in warm weather especially if there is much electricity in the air. According to my observation in this locality, the weather has nothing whatever to do with it.

Case 4.—Mrs. K—— primipara farmer's wife, blue eyes, tall, large boned, very strong and well nourished. In this case the convulsions did not come on until several hours after the labor was completed. The shoulders and arms were convulsed much more than the lower limbs. It is now about twenty-five years since Mrs. K—— had this illness but she has never been able to raise either hand to her head in a natural manner. She has given birth to several children but has had no more convulsions. She was bled moderately, and had anodynes and antispasmodics. Retention of urine was a marked feature in her case. The infusion or tincture of *Digitalis* as a diuretic and heart tonic is a favorite remedy with me in nearly all conditions incident to the parturient woman. This patient made a good recovery though rather slow. Was this a case of partial paralysis consequent upon a serous effusion on the brain?

Case 5.—Mrs. G—— primipara, light hair, blue eyes, medium size. After the child was born she was seized by a well developed convul-

sion. I took blood as soon as I could and gave her a dose of morphine. Luckily she had no more spasms and she was unconscious but a short time and made a rapid recovery.

Case 6.—Mrs. B—— aged 19 years light complexion, blue eyes, found patient on my first visit suffering intense neuralgic pains in the back and also in the region of the uterus,—had passed two menstrual periods without show. One week previous in lifting a heavy weight had felt something give way and she has now a dark bloody discharge from the uterus. Digital examination disclosed the womb slightly enlarged, the neck abnormally elongated and small and to the touch it felt as if a string or small cord was drawn tightly around it at its junction with the body of the uterus. Mrs. B—— had invariably suffered intensely at every catamenial period. Dry cups applied to the back, feet in hot water Chloral and the Bromides usually gave relief to the Dysmenorrhœa but now had little or no effect. May 8th a trifle easier continued treatment except the dry cups, 9th pains more severe and simulated labor pains. First convulsion to-day followed at intervals by several others, but no coma. She was bled ten or twelve ounces and inhaled chloroform with good effect,—she could not take morphine. Longer intervals between the fits, was obliged to discontinue Chloral and Bromides. Retention of urine, gave diuretics. The using of the catheter caused much pain. Urine strongly ammoniacal. There was not much change in the symptoms on the 10th 11th and the 12th. On the 13th I told the husband and the mother the uterus must be emptied of what we believed to be a fœtus of two months, before relief could be obtained. The bloody discharge still continued and the abortion was a foregone conclusion. The os was found softer and more patulous but the constriction as bad as ever, nevertheless dilatation was attempted and after many trials (the patient being under the influence of Chloroform) the constriction was dilated sufficiently to allow the use of the placental forceps to extract the fœtus, which being accomplished, the pains ceased and she had no more spasms and made a good recovery with no untoward symptoms. I told Mrs. B—— she would pass her next monthly period free from pain she was incredulous at the time but it proved true. Here was a bad case of Dysmenorrhœa very effectually cured. She has since borne two strong healthy children. We have in this patient a case of genuine puerperal eclampsia in an abortion at, or near the beginning of the third month of pregnancy. How will the theorists account for it? Were the brain and spinal marrow at fault or was it albuminuria? Was it not due rather to a peculiarly sensi-

tive condition of the uterine nerves propagated through the whole spinal system? Writers discussing this disease seem to have no clear definite ideas as to its pathology. We all know to a certainty, eclamptic convulsions attack only the parturient woman. Ramsbotham says the most usual cause is pressure upon the brain. But he did not explain how that could happen in an abortion at three months. He also says the disease has often proved fatal without any organic lesion being evident on dissection and mentions several cases in which he believes the cause was irritation propagated immediately from the uterus to the brain. Authors are not very well agreed as to the remote or proximate cause. Some claim it to be the result of, and dependent upon albuminous urine: a sort of nephritis, while others believe it closely allied to apoplexy and still others to an anæmic condition of the blood-vessels of the brain; or all of the above-mentioned pathological conditions mixed and mingled and finally resulting in eclampsia. According to my observation, the remote cause of eclampsia is an impregnated uterus and the exciting cause labor pains—an effort of Nature to relieve itself of what constitutes an offending body in a given case and why convulsions are present in one patient and absent in another no pathologist can explain. In this connection permit me to contribute my mite of what I deem to be facts concerning this disease. Every patient I have seen has had blue eyes or more often pale blue eyes, light colored hair and would be classed in temperament as nervo-lymphatic. The figure may be stout or thin, tall or short, but the temperament of eclamptic patients is always the same. For many years I have borne it in mind that when called to the bedside of a woman in labor and I saw that she had dark hair and dark eyes, I felt assured that whatever complications might arise she was safe from the always to be dreaded convulsions. Convulsions do not follow difficult and lingering labors, on the contrary all of my cases have been easy normal labors. Cazeau says the head almost always presents. In all my cases the head presented in first position of Baudelocque the labor was rapid and the “fits” did not appear to retard it a particle. That being the fact it would be unwise to rush for your instrument bag at the first onset of the convulsions. We may all see there is nothing malignant about eclamptic paroxysms. It is marvelous how quickly a patient recovers from an attack of it. She is entirely unconscious and consequently suffers no pain to reduce her strength. Writers generally overrate the mortality of convulsions. I believe that in the hysterical and epileptiform varieties, it is almost never fatal. In order to make this paper as complete as

possible I will describe a fatal case,—the first and only one in my practice,—of the apoplectic variety.

Case 7.—Mrs. R——, mulatto, fine form, medium size, deep blue eyes, hair dark and curly, fourth child born after a comparatively easy labor. About thirty hours afterward had a “fit.” I found her in a profound comatose state, stertorous breathing, no motion whatever in the muscles of the limbs, and no motion of any muscles except the respiratory; no frothing at the mouth and no more fits, thus she remained until death closed the scene. Mrs. R——’s husband was a white man. I discovered at the birth of the first child that she was not a physically perfect woman; the breasts had no nipples. The mammæ were perfect in size and shape, but no appearance of any nipples, the skin as smooth in one place as another. This woman was bled moderately, had counter-irritants, but died next day.

I think this was a case of genuine apoplexy and just as fatal in a lying-in woman as in any other person. The above are all my own cases, but I have seen as many more in consultation, but these are sufficient to show the different types or forms of the disease. The correct statement of the prognosis will depend upon our ability to discriminate between the epileptic and apoplectic forms of the convulsions, if of the former we may be tolerably certain the patient will recover, but if of the latter it is commonly fatal. Some authors mention a form of what is called serous apoplexy, an effusion of serum within the calvarium which may be absorbed and the patient recover. I am tempted to quote Dr. Churchill, who says “The entire and persistent insensibility, the absence of repeated paroxysms with accompanying symptoms, will at once enable us to distinguish apoplectic from hysteric or epileptic convulsions.” In this form it is invariably fatal. We believe it is only a small percentage of all the cases which assume this fatal aspect.

In the treatment of puerperal eclampsia I believe the consensus of opinion (both of European and American physicians) at the present time, favors the abstraction of blood. With our present knowledge of the disease this opinion appears to be not only theoretically but practically correct. Usually the attacks come without warning, therefore it is well to be prepared and if possible bleed before she has the second spasm. The quantity to be taken will be subject to your own judgment in a given case and the sooner the blood is taken the better for the patient. From 8 to 16 ounces is amply sufficient. You do not bleed with the expectation of stopping the spasms immediately, but more as a precautionary measure. You see that by bleed-

ing you diminish the volume of blood and by just so much lessening the danger of engorgement and also by so much diminishing the danger of converting an epileptic into the fatal apoplectic convulsion. I would like to say, but I scarcely know how to express it, that our authors and instructors dwell too much upon trying to stop the convulsions, and have advocated very heroic treatment in bleeding and in the use of morphine and chloroform. Some of them instruct us to bleed 20 or 30 ounces, some from 40 to 50 and even to 60 ounces, and one author has bled a woman 70 ounces. It would be interesting to know the result in the latter case. In my opinion to practice the profuse blood-letting advocated by them would be unwise in the extreme. It is not necessary. The spasms do not kill the woman, if they did my first case ought to have died within forty-eight hours after the first attack. It is well understood the parturient woman bears bleeding better than any other class of patients but that is no reason why she should be bled to death in order to stop the convulsions which are not essentially injuring her. The after treatment is chiefly morphine when it can be borne. The bromides and ordinary nervines may possibly be of some benefit. In the use of chloroform we must remember the woman is already under the influence of a powerful anæsthetic and is entirely unconscious therefore chloroform is to be used with great care lest the remedy be worse than the disease. In several instances I have observed a slight twitching of the muscles in the woman when she is "having a pain" to give an opiate immediately is the proper remedy. Another valuable remedy is to be noticed and that remedy is time. Do not hurry if you find the temperature about normal and the pulse ranging less than one hundred to the minute; your patient will recover. The opiate will soothe after a time the irritated nerves, but time is necessary. A great many things may be done for the patient, in the way of nursing which will tend to keep the attendants busy, an important point, which does no harm to the sufferer, and above all, "don't lose your head." A few words in regard to another mode of treatment advocated by Dr. C. C. P. Clarke, of Oswego, N. Y., in the July number of the *American Journal of Obstetrics*, 1880, in which he advises and recommends very large doses of morphine administered subcutaneously and claims superior success. He says he would give one and a half to two grains of morphine at one dose, have it weighed out by the apothecaries' scales, and adds if a man is timorous his first dose may be only one grain but the two-grain dose is the proper one. I mention this so that if any gentleman present has tried the large doses of morphine he may tell us what

he thinks of this mode of treating puerperal eclampsia. I claim to have been successful in my treatment of this fell disease, so does Dr. Clarke and so do you perhaps, all of which goes to prove what I have before stated, that puerperal eclampsia is not so fatal a disease as the old writers taught and the profession have been accustomed to believe.

REMARKS ON ECTOPIC PREGNANCY.*

BY CHARLES P. NOBLE, M. D.

In this communication I shall not discuss the subject of ectopic pregnancy in a systematic manner, but desire to call attention only to certain points concerning it. My experience with ectopic pregnancy embraces twenty-five cases, fourteen of which were seen within one year. This would indicate that cases of ectopic pregnancy do not constitute a constant percentage of one's operations. During the year in question about fifteen per cent. of the abdominal sections done were for ectopic pregnancy, whereas in the previous year only two per cent. of such cases were met with. Prior to this exceptional run of cases ectopic pregnancy had been present in between three and four per cent. of my abdominal sections.

I had the curious experience of doing three successive cœliotomies for ectopic pregnancy in four days, and of having four women in the hospital at the same time, who were convalescing from operations done for this condition. This undoubtedly was a very curious if not a unique experience.

All of the twenty-five cases were instances of tubal gestation. Of these the tube was unruptured in four, in twenty rupture had taken place, and in one a tubal abortion was under way.

The case of abortion was of interest because of the peculiar form of the blood clots which filled the pelvis. These were coiled up much as though they had been ground through a sausage machine. The ovum was located about the inner third of the tube. Hæmorrhage was caused by partial separation of the ovum. The blood clotted in the tube, and the clot was forced out as a sausage-shaped mass, by the continuance of the hæmorrhage.

* Read before the Philadelphia Obstetrical Society, January 3, 1895.

In nineteen of the cases, a diagnosis of ectopic pregnancy was made (including two in which it was strongly suspected) before the operation, and in six the condition was supposed to be some other morbid condition of the uterine appendages, such as tubo-ovarian inflammatory conditions, or adherent ovarian tumors. Of the cases in which a diagnosis was made (one strongly suspected), three of them were instances of unruptured tubal pregnancy, and seventeen (two strongly suspected) of cases in which rupture had taken place (including the case of tubal abortion). In two of the cases a diagnosis of ectopic pregnancy had been definitely abandoned, because of the absence of symptoms supposed to be characteristic of rupture, and the operation was done with a diagnosis of pelvic tumor.

Following the dictum of Mr. Tait, the doctrine has become current, that a diagnosis of ectopic pregnancy before rupture is impossible, and that the diagnosis of this condition after rupture is extremely simple. My own experience does not bear out this view.

In two of the cases embraced in this report, a diagnosis of unruptured ectopic pregnancy was made, and operation urged. In one case the operation was done, and an ovum of from four to six weeks' growth was found in an unruptured tube. The diagnosis was confirmed by Dr. Piersol of the University of Pennsylvania. In the second case operation was refused. In about a week after the operation was urged rupture took place, followed by an enormous internal hæmorrhage. Operation was then done, with a fatal result. In one other case in which rupture had not taken place, the diagnosis was not made, not because the symptoms were not sufficient, but because they were not carefully looked for. This patient had had a number of attacks of pelvic peritonitis, and was supposed to have had one of her "old attacks." As operation had been repeatedly urged for the tubal disease, which was known to exist, it was now accepted, and done without further study of the case. In one other case of unruptured tubal pregnancy, the diagnosis was considered uncertain, and to be either an adherent ovarian cyst or a tubal pregnancy. That is to say, in the four cases of unruptured tubal pregnancy which have come under my notice; in two of them a positive diagnosis was made; in a third it was suspected; and in the fourth, while the diagnosis was not made, it was not because the symptoms did not warrant it, but because they were not carefully looked into.

Of the cases of ruptured tubal pregnancy with hæmorrhage into the peritoneal cavity, a diagnosis was made in seventeen cases, in three cases it was not even suspected, and in two cases this diagnosis was

ruled out because of the absence of symptoms supposed to be characteristic of the condition.

This experience appears to be a sufficient warrant for disputing the currently received dictum concerning the diagnosis of ectopic pregnancy. So far as my experience goes, the cases in which rupture had not taken place were as easily diagnosed as those in which it had taken place. I believe that in a large percentage of cases, whether rupture has or has not occurred, the symptoms and physical signs are so characteristic, that the diagnosis is just as certain as in any other form of pelvic disease. On the other hand, in a considerable percentage of cases, neither the physical signs nor the symptoms are sufficient to enable even a careful, trained observer to arrive at a positive diagnosis. He may "suspect" the condition, or he may think that the condition is "either ectopic pregnancy or a pelvic tumor," but he is not able to give a definite opinion. Still another class of cases will be met with, in which the symptoms are not at all suggestive of ectopic pregnancy, even though rupture has taken place. The usual menstrual history is absent; the pains supposed to be characteristic are absent, or else are of so indefinite a character as not to be distinctive; and the faintness and collapse supposed to characterize rupture does not take place. I have had three such cases, in which there was no ground to make a diagnosis of ectopic pregnancy, and yet operation disclosed this condition, with rupture and internal hæmorrhage.

In the twenty-five cases there were four deaths. All of these cases were desperately ill at the time of operation. In the first, the pregnancy had advanced to near the fourth month, and the abdomen was so filled with blood that it was protuberant as in abdominal dropsy. The patient was blanched, and had a rapid pulse. She died within thirty-six hours, in hyperpyrexia. The conditions present in the second case that died were very similar to those in the first, except that the pregnancy was not so far advanced. The patient lived nearly a week, and died apparently of exhaustion, from acute anæmia. The third patient who died was moribund at the time of operation, the abdomen being even more distended with blood than in the first two cases. These three cases belong to a special class—those in which the rupture is followed by an enormous and sudden internal hæmorrhage, the bleeding being so free that there is no opportunity for a hæmatocele to form. The fourth patient who died had general septicæmia at the time of the operation, having a temperature of 105° . The hæmatocele had suppurated, the entire pelvis was covered with a

slough, and the left broad ligament and pregnant tube were distinctly gangrenous. She died at the end of a week of general septicæmia. In this case the death was due to septicæmia present before the operation, and the local conditions were such that recovery was impossible. The other three deaths were distinctly due to the enormous and sudden hæmorrhage which had taken place. All the other cases recovered, including those in which rupture had not taken place, and those in which the rupture had been followed by moderate hæmorrhage, presumably from small vessels, so that there was an opportunity for the blood to clot and an hæmatocoele to form. All the cases in which the pelvis was filled with clots, even though considerable free blood was present, recovered—the explanation being, in my judgment, that the bleeding had been from small vessels, and had extended over a considerable period of time, perhaps occurring on different days, or during different weeks, so that the drain upon the circulation was not sudden, and time was afforded for the blood-making organs to supply to a greater or less extent the loss which had been suffered.

At this time I wish to say only a word concerning the principles which should be followed in operating. First, the operation should be done as soon as the diagnosis is made. Second, the principles which apply to all pelvic surgery are equally applicable to cases of ectopic pregnancy, in which the condition of the patient is good. Third, when an operation is done upon a patient *in extremis*, rapidity in operating is essential to success. Nothing should be attempted which is not absolutely essential. The opposite appendage should not be removed unless it is plainly an immediate menace to life. The pregnant tube should be rapidly separated from its adhesions, ligated and removed, and this should be followed at once by free irrigation of the peritoneal cavity. The abdomen should be left full of water, as this plan saves the time necessary to dry the peritoneal cavity by sponging, and also supplies the vessels with fluid, to make good in part the loss they have sustained. Drainage should always be used in this particular class of cases. It is my purpose to use transfusion in all such cases in the future, although I have not done so in the past. These patients die of acute anæmia. Death is largely due to the fact that there is not enough fluid in the vascular system to maintain life.

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EDITORIAL.

GYNÆCOLOGICAL TEXT-BOOKS.

Those of our readers who perused carefully the editorial in the January number will remember our strictures upon a certain style of text-book, now in vogue, called a "System" and upon other text-books, individual in name, which exhibit the same radical absurdities of construction. We had neither time nor space to more than touch upon this matter then, but we feel the subject to be so important, so far-reaching in its effects, that it deserves more extended and exhaustive discussion.

While the first and common object of all scientific works should be *to teach the truth*, this is peculiarly so of text-books, which are addressed, in an especial manner, to the young, the inexperienced and the susceptible. It is not to *absolute truth*, of course, to which we refer in this connection, but to that relative truth, *the individual belief* of each author, which should, throughout his writing, be not only apparent but should dominate all other aims and ambitions.

Is an appreciation of this high though just standard very evident among the writers of our most popular gynæcological text-books today? The fact of belief in anything, which is subject to definition by Reason, implies, first, a knowledge of the thing believed in and, secondly, a knowledge of the steps by which the belief itself was attained to. Do we find these attributes in that text-book which presents an array of different methods of curing the same injury—each method opposed to the other in the direct object to be attained and

contradictory, in its pathological foundation, of the pathology of all the other methods?

Yet, is not this the most popular style of text-book, because the ignorant student or practitioner is dazzled by a mass of imposing names and wishes his money's worth in this respect? And, what is worse and inexcusable, do not many of our best writers pander to this meretricious desire of their public and make of their works instead of a straight-forward, systematic exposition of their own belief and experiences in the study of gynæcology, merely a tasteless hotch-potch of the sayings and doings of every celebrated gynæcologist throughout the world?

We do not feel ourselves unjust, when we suspect that the dominating object of such text-book writers is not to teach the truth but rather to advertise themselves and to make their books sell well.

Is it honest to give prominence and praise to another's work, if we believe that work to be wrong in conception and totally inadequate to the accomplishment of the object? But if such work is mentioned, it should be fairly explained, its *rationale justly given*, and a comparison then clearly drawn between it and that method which the author believes to be the appropriate and adequate one.

We have pointed out what gynæcological text books should *not* be; let us now consider those features which are essential to an appropriate vehicle of scientific teaching. Every work which claims to be didactic must, if its claim be just, present one foremost and distinguishing trait, viz.: a *standard of comparison*. This standard is naturally the author's own belief—his own logical deductions. If he have no opinions distinctive enough to be worthy of positive expression and maintenance, let him gratify himself with a personal appreciation of his broad-minded, unprejudiced and colloid intelligence; but, in the name of humanity! let him not write a text-book. This Standard of Comparison, then, expresses both a personal belief and a desire to teach the truth.

The next is a real, not a fancied, knowledge of the work, operative or otherwise, of any gynæcologist to whom reference is made. It is inexcusable that an author should attempt to explain another man's opinions or operative work, unless he *knows* that he understands them as well as though they were his own.

The third essential is implied by the first and second. It is derived from a logical appreciation of the terms: *opposed* and *contradictory*. An author with such an appreciation will not express an opinion in one part of his book which is implicitly contradictory of any other

statement of his, nor will he advocate an operation which is either theoretically or mechanically opposed to other operative procedures which he equally indorses, whether his own or those of another. This third feature, therefore, is *system and logical sequence*.

These, *a standard of comparison* and its application, *a just and practical understanding and expression of another's work* where such reference is made and evidence of *system and logical sequence* of ideas are, in our judgment, the three characteristics without which a text-book can not be good. Systematic and convenient arrangement of subjects, lucidity and terseness of expression, brilliance of illustration and magnetism of style—important and even necessary as most of these adjuncts are, they render the text-book, which is wanting in the three essentials, but the more pernicious. This style of book, with its popularity, has already borne fruit in the unstable, constantly shifting opinions of many gynæcologists and especially among our younger men, whose ideas of the science of gynæcology might, in many cases, be defined as: "A knowledge of the opinions of many gynæcologists and the application of these, without personal bias."

We scarcely think any words are needed to explain, to those of our readers at least who are in accord with us in our standard of a good text-book, why we have nothing but condemnation for the so-called "Systems of Gynæcology." They can not possess even one of the essential features we have pointed out. It is no excuse for their existence that they are devised by publishers for advertising purposes and that they are merely a matter of contract between the publishers and the medical writers. This should have but it has not yet, unfortunately, withdrawn these books from a scientific to a mercantile plane.

It is time that our medical critics and reviewers should cease to judge a book by the meretricious standard alone of authorship, quotation of prominent names, number of pages and excellence of the illustrations and binding. Rather let them apply *this rule* to an author: Has he something to teach, and does he believe in his own teaching?"

REVIEW.

DIFFICULT LABOR. A GUIDE TO ITS MANAGEMENT FOR STUDENTS AND PRACTITIONERS. By G. ERNEST HERMAN, M. B. Lond., F. R. C. P. New York : William Wood & Company, Publishers.

(This book was received from the publishers too late for notice in the January issue.)

Anything from the pen of so eminent a teacher and physician as the author can not fail to arrest the attention and awaken the interest of the medical profession. A very large experience as a practitioner and teacher of midwifery, and as an examiner on that subject, has led the author to believe that a book was needed, which should give more definite guidance in practice than is contained in the text-books of the present day. He has tried to tell the reader clearly the best way of dealing with each complication of labor, and why it is the best. In this he has succeeded admirably for his language is plain, concise and to the point ; and it must be so in order to be of any value on a subject of this kind.

The author rightly emphasizes the great importance of early diagnosis, for we believe that on this rests the foundation of the practice of midwifery in this age of *election* ; as is shown by an example quoted : " If the deformity be so great that Cæsarean section is required, the danger of this operation is not one tenth so great as when done at a time appointed *before labor has begun*, so that preparation can be made and skillful assistance had ; as it is when postponed until the patient has been exhausted by fruitless labor."

In a book of such sterling worth we are surprised to note the very slight stress that is laid upon the necessity for rigid asepsis in the procedures advocated. When we consider the brilliant results of to-day and compare them with those of the pre-antiseptic days, when " child-bed fever " so frequently followed even uncomplicated confinements, and forceps and version were the only operations known to the average practitioner, we can not overestimate its importance. We believe that nothing should be repeated so often or so emphatically as the necessity for cleanliness, not only ordinary cleanliness but surgical cleanliness in the conduct of an obstetrical case. The fundamental reason why the mortality has been lowered is because it has been proved absolutely that septicæmia does not exist in the body unless introduced

there, and that the man, who does not take every precaution against its introduction, is guilty of criminal negligence.

We might suggest that a chapter on Puerperal Eclampsia would not have been out of place and would have added to the value of the book.

Chapters II and III are devoted to the study of occipito-posterior positions and face and brow presentations. It is as clear and concise as the English language and most excellent illustrations can make it. In the treatment we differ with the author in the advisability of forceps rotation. In face and brow presentations when the head has been driven down into the pelvis, and is then arrested and can not be made to advance with the forceps, then we believe that we are justified in resorting to symphysiotomy and that when the operation is elective it will very seldom be necessary to sacrifice the living child. When one thinks of the increase in the true conjugate diameter from one fourth ($\frac{1}{4}$) to one half ($\frac{1}{2}$) an inch and in the transverse and oblique diameter, a gain of from three fourths ($\frac{3}{4}$) to one and a half ($1\frac{1}{2}$) inch by symphysiotomy it becomes apparent that with a normal head the cases demanding perforation will be extremely rare.

The chapter on molding of the head is extremely interesting and is especially rich in illustrations.

The subject of pelvic presentations receives the attention that its importance demands. Many points that are merely touched upon in most text-books are fully discussed. The different methods of delivery of the after-coming head are dwelt upon at length and the dangers to the child are fully set forth.

In the chapter upon abnormal uterine action the author defines natural labor as follows: "For labor to be natural not only must the child be living, of not more than average size and weight, and presenting in the most favorable position, but the uterine contractions must recur with such force and frequency that the child is born within twenty-four hours from the time at which the pains began." This we think is a very complete and comprehensive definition. In the same chapter the author claims that in primary uterine inertia ergot is useful in the second stage, if it is certain that there is no obstruction and one may be pretty sure of this: (1) if the labor is premature, (2) if the patient has had easy labors before with average-sized children, and the head has sunk into the pelvis, and one can feel that the greatest diameter is not above the brim. When we consider the great difficulty experienced by the most skillful in determining the relative size of the head and pelvis it seems to us much safer to abide by the rule of never giving ergot until after the expulsion of the placenta.

The chapters on pelvic deformities are excellent. The subject is treated with a thoroughness and skill not attained by many writers of volumes of much greater pretensions. It abounds in cuts and diagrams that are absolutely necessary for a perfect understanding of the subject.

The study of the forceps has received great attention. When to use them and how to use them is explained clearly and intelligently. The author appreciates the fact that the application of these instruments is the most frequent of all obstetrical operations and a thorough knowledge of them is absolutely necessary to every practitioner of midwifery. We are glad to notice the earnestness with which the author urges immediate delivery when the head ceases to advance with the pains and fails to recede in the interval. Before this principle was generally recognized our hospitals were full of cases of vesico-vaginal fistula but now they are comparatively rare.

The chapter devoted to Cæsarean Section is well written but is lacking in the minute details of operative technique and asepsis which are most essential to the success of this operation.

The discussion of the operation of symphysiotomy is short and does not give sufficient prominence to this procedure. This is not surprising when we consider how slow the English obstetricians have been to recognize its merits. To the publishers credit is due for the production of an attractive volume, convenient in size, good in binding and replete with excellent illustrations.

G. H. M.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

January 3, 1895.

The *President*, BARTON COOKE HIRST, M. D., in the Chair.

Paper of Dr. NOBLE. (See page 167.)

DISCUSSION.

Dr. J. PRICE: This is so important a subject that I should like to make a few remarks. We all know that the profession have been educated to recognize this malady and it is one of the most frightful and horrifying troubles that we have to deal with aside from appendi-

citis. I scarcely know of any trouble responsible for more deaths than ectopic pregnancy. Much has been said and much written, but much remains confusing. We all know that this work began in America, William Baynham of Virginia doing the first two operations in 1790 and 1799. Both successful.

Dr. Noble has taken rather peculiar ground from time to time. For instance a few years ago he said positively in the Pathological Society that unless the fœtus was found, it was not a case of ectopic pregnancy. That is on record. Dr. Formad in his thirty-five cases in the Coroner's office found a very small number of fœtuses—less than twenty-five per cent. It is the exception to find the fœtus.

Dr. Noble alludes to five cases without symptoms and with an enormous quantity of blood in the peritoneal cavity. Surely the examination in those cases was careless or the observer has not given the subject sufficient attentive study to recognize symptoms so marked and so common and always present, the inaptitude to conception, prolonged sterility, the absence of one or two periods, or a delayed period. There are some symptoms which are characteristic, for instance the cramp-like pains which are always present where rupture occurs. To-day I asked a patient who had borne five or six children and has suffered all sorts of pain incident to childbirth—I asked if she had ever experienced pain of that character in her labors and she said that she had not. She has had several ruptures. She missed May, June and July. Rupture took place in August and recurring attacks have since taken place. She now comes greatly emaciated, suffering greatly and with a huge mass on the left side posteriorly with the uterus pushed up. All over the country we now find physicians recognizing this trouble and nothing could be more gratifying than the fact that we have shared in this education that has gone on all over the country, educating the general practitioner to recognize these important cases.

The mortality of four cases in twenty-five is too large, and the fact that some of them died one week after operation would rather indicate that the toilet, drainage or after-care was not complete. The practice of sponging to remove the blood in these cases is bad. I scarcely know of anything that will destroy life quicker than the sponge applied in these cases and pushed into all the corners and crevices of the peritoneal cavity.

It is only exceptionally that you find an absence of objective signs and then only in very acute cases. You may be asked to see a patient where the hæmorrhage takes place at night. You find the

patient exsanguinated. The uterus in position and no boggy mass. You have nothing to guide you except the history of the case and the characteristic symptoms. I have had only two such cases in one hundred and three ectopic pregnancies and both were in the wives of doctors. In these cases I plainly stated that it was extra-uterine and we all agreed that section should be done. An enormous quantity of blood was found in both cases and both women made speedy recoveries. In these cases there is no time to be lost with transfusion, but the use of a saline solution thrown into the cellular tissues is sometimes of service. I have done that with good results.

With regard to the removal of the placenta. This is still a disputed point. One or two successful removals of the necrotic placenta in chronic cases emboldens a class of men to attempt the removal of the placenta in all cases. The man that attempts to remove a living and growing placenta from the wrong side of the uterus, will recognize a characteristic hæmorrhage which he has never before witnessed. A few months ago an old physician of Alabama told me of a case where the woman had gone through spurious labor and was dying of overdistention and exhaustion. He recognized extra-uterine pregnancy and opened the abdomen and delivered the child and attempted to remove the placenta. At once the hæmorrhage was alarming. He simply delivered the placenta and uterus and placed a Koeberlé and removed the uterus and the patient recovered. That is an exceptional case for only rarely do we find the placental attachment limited to the uterus. It may extend from iliac fossa to iliac fossa and involve both large and small bowel. The employment of other methods as hermetically sealing the sac, or filling it with vinegar is better.

I am glad that in at least one variety of cases, Dr. Noble has reached the point of minimizing the time, exposure and other things which in a slow operation predispose to mortality.

DR. CHARLES P. NOBLE : I am quite surprised to learn that I ever said that extra-uterine pregnancy was not extra-uterine pregnancy unless the foetus was found. I have no recollection of such a statement. If I believed that I should have to throw out most of the cases reported to-night as the foetus was found in only four or five of the twenty-five cases.

I have no reason to change what I said about some cases having no symptoms. I observed these cases carefully. Two were in the hospital for a week and in neither had I the remotest idea that they had extra-uterine pregnancy until I opened the abdomen. While I

agree that in general the diagnosis is very clear, I am quite certain that in a certain percentage of cases symptoms are not present that would warrant a diagnosis.

My paper dealt simply with extra-uterine pregnancy in the early months and did not cover the late cases discussed by Dr. Price.

Paper of Dr. J. PRICE. (See page 150.)

Adjourned.

FRANK W. TALLEY, *Secretary*.

TRANSACTIONS OF THE BRITISH MEDICAL ASSOCIATION.

Held in Bristol, July 31st, and August 1st, 2d, and 3d.

SECTION OF OBSTETRIC MEDICINE AND GYNÆCOLOGY.

J. G. SWAYNE, M. D., *President*.

THE TREATMENT OF UTERINE HÆMORRHAGE DURING THE LAST TWO MONTHS OF PREGNANCY.

BY W. J. SMYLY, M. D.,
Master of the Rotunda Hospital, Dublin.

Uterine hæmorrhage occurring during the last two months of pregnancy may result from a wound or disease; but in the vast majority of cases it is due to the premature separation of the placenta, and in the limited time allotted to me I shall consider only those hæmorrhages which proceed from the placental site.

The uterus is divided by Nature into two distinct portions, an upper and a lower. These two portions can be distinguished both in the pregnant and the non-pregnant state, but the difference is most apparent after parturition. The upper segment is thick and muscular, the peritoneal covering is intimately connected with it, and its arterial supply is derived directly from the uterine and ovarian arteries. The lower segment is thinner, less muscular, but more elastic than the upper; the peritoneal covering is loosely connected with it by connective tissue, and the blood-vessels pass to it through the

upper or contractile portion. The line of junction of these two segments of the uterus is termed the contraction ring.

The placenta may develop in any part of the uterus ; it generally does so in the upper, and this is therefore the normal site, but occasionally it grows partly or altogether in the lower segment. Wherever the placenta may be situated its premature separation causes hæmorrhage. We distinguish those which proceed from the normal site as accidental, and those from an abnormal site as unavoidable hæmorrhages. Neither of these terms is altogether satisfactory, but they have the sanction of long use and general acceptance ; and it is improbable that we shall see them replaced by better ones, nor is it possible to draw the line exactly between these two forms of hæmorrhage ; anatomically we should consider all cases in which the placenta dips down below the contraction ring as examples of placenta prævia, but clinically the majority of these can not be diagnosed as such, and are therefore classed among accidental hæmorrhages.

Placenta prævia occurs most frequently in women who have borne many children in rapid succession ; who have relaxed subinvolved uteri, and who have suffered from leucorrhœa. It occurs with relative frequency in women who have frequently aborted, or who suffer from retroversion, myoma, or carcinoma of the uterus ; in fact, in connection with an enlarged and diseased uterus. It has also been observed to recur in plural births and in the same woman in subsequent pregnancies.

The placenta in these cases is seldom normal, it is generally thinned out and covers a large surface ; there are often membranous spaces in it, with little or no placental tissue. Placenta succenturiata is common, and the insertion of the cord is eccentric or velamentous. A very interesting and important specimen was shown by Hofmeir in 1888 at the meeting of the German Gynæcological Association in Halle. It was a fifth-month pregnant uterus, in which a portion of the placenta grew from the decidua reflexa, and covered the os internum, while the remainder of the placenta was attached to the middle of the uterus. From these facts it may be inferred that the low attachment of the placenta may be due to four different causes. A very large placenta, as in plural pregnancies, may not have room to develop in the upper part of the uterus, and therefore spreads into the lower segment. In the normal uterus the walls are convex inward, and pressed together so that there is only a potential cavity ; in metritis the walls are often concave inward, forming a true cavity, thus permitting the ovum to descend. The ciliated epithelium in the nor-

mal condition probably delays the descent of the ovum: but in disease this epithelium is shed. Lastly, the placenta may develop partly from the decidua reflexa, and so become spread over the os internum. This abnormality has been attributed to a diseased serotina forming an imperfect placenta, to compensate which the chorionic villi, within the reflexa, develop placental tissue.

The diagnosis of placenta prævia depends upon hæmorrhage occurring toward the end of pregnancy or the commencement of labor; and feeling the placenta through the cervix or os uteri. Formerly importance was attached to hearing the placental *souffle* over the pubes or *per vaginam*, and to the effect of the labor pains upon the flow of blood, but neither of these has any diagnostic value.

It is difficult to account for the hæmorrhages which occur before labor commences. Possibly they are due to a disproportion between the placental site and the placental area. When they commence with labor, they are due to the physiological process by which the ovum is separated from the lower part of the uterus. At the commencement of labor the lower uterine segment is hemispherical, and is occupied by the presenting part of the fœtus, through which it directly receives the uterine pressure, and over which it is gradually drawn upward, being converted as the os dilates into a cylinder, equal in circumference to the presenting part of the child; at the same time, the bag of the waters is pressed down into and dilates the cervical canal, and orificium externum. So long as the membranes remain intact the ovum is driven downward by the uterine contractions, the lower uterine segment being at the same time drawn upward, a separation takes place between the two, and the lower pole of the ovum is cast free from its uterine connections; this separation commences at the os internum and gradually extends upward toward the contraction ring. When the membranes rupture, however, the fœtus only is driven downward, the membranes being drawn upward with the uterine wall to which they are attached. Should the placenta, which is a specially modified portion of the fœtal envelopes, be developed at the lower pole of the ovum, it will be separated with the latter, and hæmorrhage occurs; as the detachment extends more vessels are opened, but as the detachment may cease with the rupture of the membranes so may the bleeding also.

Treatment.—In almost every case of severe hæmorrhage the os will be found sufficiently dilated to admit two fingers; a foot should then be brought down, when the rupture of the membranes, and the pressure of the fœtal body upon the placenta, will control the hæmor-

rhage ; and the further progress of the case is left to the natural efforts. Should flooding continue, however, gentle traction upon the leg of the fœtus is all that is required. If any part of the fœtus present excepting the lower extremity, version either by abdominal manipulation or by Braxton Hicks' bipolar method is a necessary preliminary to bringing down the foot. This is the routine practice, and is applicable to the great majority of cases. There are two conditions, however, in which it is inapplicable—first, where the os internum will not admit two fingers ; and, secondly, where labor is so far advanced that version is impossible or unnecessary. In the first of these I should plug the vagina, but such cases are rarely met with. Out of fifty cases that we have treated in the Rotunda Hospital and extern maternity during the past four years I have not once met with such a case. When labor is far advanced, and the os well dilated, rupture of the membranes is all that is required.

Other methods of treating placenta prævia should be mentioned, but I do not recommend any of them. *Accouchement forcé* has, I hope, been universally abandoned. Dr. Barnes' method of separating the placenta from the lower zone of the uterus is good and scientific, but it does not with absolute certainty control the bleeding, and by rupturing the membranes early in labor it renders version more difficult should it afterward become necessary ; besides the separation of the placenta with the finger, even with the most careful antiseptic precautions, is not free from risk. It is, however, preferable to the method still so frequently adopted of plugging the vagina until the os is sufficiently dilated to admit the hand, and then performing internal version followed by extraction. This method entails a number of dangers, resulting in a maternal mortality of about twenty-four per cent. The plug itself is a source of danger, especially when it has to be frequently renewed. It may introduce septic matter from without, and causes a stagnation of the discharge which is liable to putrefaction ; besides, it entails loss of time and considerable hæmorrhage before the os is sufficiently dilated to effect delivery. The introduction of the hand may carry up septic matter from below, and favors the entrance of air into the veins, a recognized cause of death in these cases. The extraction of the child may cause deep cervical lacerations, and the emptying of an imperfectly retracted uterus predisposes to atonic *post-partum* hæmorrhage. The method already recommended minimizes all these dangers. The early performance of version prevents excessive *ante-partum* hæmorrhage ; the plug is not employed, the hand is not introduced into the uterus, and the expulsion of the child

being left to Nature, *post-partum* hæmorrhage is efficiently guarded against. The mortality following this method is under seven per cent. Out of twenty cases treated in the wards of the Rotunda Hospital during the last four years and a half two patients only were lost; one died of pulmonary embolism on the eighteenth day and the other from rupture of the cervix, having been delivered during my absence by internal version followed by extraction; she died in a few minutes. Excluding this case the mortality was under six per cent.

Accidental Hæmorrhage.—This term suggests that the premature separation of the placenta from the normal site is always the result of violence. Too many well-authenticated instances have been recorded in which the flooding immediately succeeded a fall, a blow, lifting heavy weights, and even a hearty fit of laughter, for us altogether to deny that the injury and the flooding were related to one another as cause and effect; but I very much doubt that such accidents could cause the separation of a normal placenta, and in the great majority of cases there is no history of an accident. Accidental hæmorrhage has been observed following upon violent mental emotion and in connection with exophthalmic goitre, uterine deformity, a very short funis, hydramnios, and plural births; in the two latter, probably owing to the retraction of the uterus, and a loss of accommodation between the placental area and the placental site. But I believe by far the commonest cause of premature separation of the normally situated placenta to be disease of the uterus, and especially of its lining membrane; and though I am not acquainted with any exact observations in proof of this statement, yet there is a concurrence of probabilities to render it certain, among which may be mentioned its frequent association with syphilis and renal disease. The blood-vessels participate in the disease of the decidua, and are thus predisposed to rupture; the extravasated blood separates the placenta from the uterine wall, and more bleeding takes place, until the tension in the cavity formed is equal to the maternal blood pressure. Evidence of this is found in some cases of placental apoplexy. In other cases the hæmorrhage continues because either the uterine wall yields to the pressure of the accumulating blood, or the latter escapes externally. The former is termed concealed internal hæmorrhage. The causes usually assigned for the retention of the blood in the uterus are adhesion of the placental margin, hæmorrhage into the ovum, firm attachment of the membranes around the internal os, and the adaptation of the lower uterine segment to the presenting part so closely as to prevent the escape of blood between them. But I am sure that disease of the uter-

ine wall, rendering it unable to resist the blood pressure, so that it yields before it, is a much more important factor, and I can not believe that in a normal uterus a fatal hæmorrhage limited to the placental site could take place.

Symptoms.—In many cases the flow of blood is the only symptom. It is often thin and serous, or dark and venous in character; but in severe cases, and especially where no blood escapes externally, other symptoms are well marked and are due partly to the loss of blood and partly to shock. The woman becomes pale, cold, faint, with an anxious expression and dark rings around the eyes; the pulse feeble and rapid. She complains of pain in the abdomen, of a dull aching or severe colicky or bursting character; uterine contractions are generally feeble or absent. If the patient does not succumb to shock, symptoms of acute anæmia become more marked, restlessness, jactitation, yawning, and dyspnœa supervene. Upon examination the uterus is found distended, harder than normal, often tender. The enlargement may be limited to a part of the organ, which is more prominent than the rest; no fœtal parts can be felt, no heart heard. A bulging downward of the cervix has been described, but nothing characteristic is usually to be discovered *per vaginam*.

The symptoms resemble those of rupture of the uterus or of an ectopic gestation. The former, however, usually occurs after the patient has been some time in labor. The pains cease suddenly; there is recession of the presenting part and the fœtus can be palpated. The latter is distinguished by the relation of the round ligament and the flaccid condition of the lower uterine segment.

Prognosis.—Many cases of external hæmorrhage are slight, but others are very severe, and internal hæmorrhages are always serious, because they are only possible in a profoundly diseased and atonic uterus, the distention of which increases the shock, and, by enlarging the placental site, increases the hæmorrhage also, and renders the rapid expulsion of the child impossible. Out of one hundred and ten cases collected by Goodell fifty-four mothers died and only six children were born alive. Hæmorrhages occurring before are more serious than those accompanying labor.

Treatment.—It is unfortunately impossible to lay down any routine treatment applicable to all cases; the condition of the patient as regards shock and anæmia, the presence or absence of labor pains, and the state of the os and membranes, must be the chief guides to treatment. Some cases require no interference, and in others simply rupturing the membranes will suffice, but the value of this method has

been greatly overestimated, and in my opinion its employment should be restricted to cases in which labor is well advanced, and where, in case of necessity, version, forceps, or perforation could be immediately resorted to. If, on the contrary, the os be small and the pains feeble or absent, the membranes should be preserved as long as possible; their rupture favors hæmorrhage by diminishing intra-uterine tension, delays the progress of labor, and renders version more difficult should it subsequently become necessary. This appears to me to be a question of the utmost importance. Does the escape of the liquor amnii bring on labor pains with sufficient promptness? and does it stop the hæmorrhage in the class of cases which I have indicated? In my experience it has not done so, and hours might elapse before uterine action sets in. Under these circumstances the blood pours into the empty uterus, nor can the flow be in any way controlled until the organ is emptied, a proceeding under such circumstances attended with the greatest risk; and my own experience fully corroborates the opinion of my predecessor, Dr. Collins, who in the report of his Mastership, published in 1836, wrote as follows: "I know of no operation more truly dangerous both to mother and child than the artificial dilatation of the os uteri and turning the child; and confident I am that the practitioner who adopts such a line of practice, except from strict necessity, will often have abundant cause to regret his proceedings." We must not forget that these patients are suffering from shock as well as hæmorrhage, and that it is liable to be increased to a fatal extent by the *accouchement forcé*. It is better in such cases to combat shock and endeavor to restore the patient by every means in our power. Where blood escapes externally and the membranes are intact, a hot vaginal douche, a firm tampon, and the application of a binder are of much use. They check external hæmorrhage, increase the intra-uterine tension, and induce or strengthen the labor pains, nor do I think the objection that the tampon converts an external into an internal hæmorrhage holds good in practice. After rupture of the membranes, however, the plug is never to be employed.

In internal hæmorrhage, if labor is sufficiently advanced, the patient may be delivered by the forceps, version, or perforation, whichever appears to offer the best chance for the mother; the child, being dead, need not be considered, but most of these cases occur either before or at the very commencement of labor. Under these circumstances one must not be in too great a hurry to interfere. In some cases the hæmorrhage may have ceased, the overdilated uterus

being unable to contain more blood, and we should endeavor to restore the patient and carefully watch her symptoms; to plug the vagina or rupture the membranes would be useless. If she gets worse we shall have to choose between *accouchement forcé* and Porro's operation; the latter I believe to be the less hazardous proceeding. I am only acquainted with one case in which this method has been employed in accidental hæmorrhage. It occurred in our extern maternity, and was performed under most disadvantageous circumstances by my former assistant, Dr. Bagot, now of Denver, Col. The woman made an excellent convalescence, and the case was fully reported by myself at the Bournemouth meeting of this Association.

In conclusion, I may thus epitomize the treatment of accidental hæmorrhage :

1. When the os is small and labor pains weak or absent, preserve the membranes intact as long as possible ; in external hæmorrhage plug the vagina.

2. If labor is well advanced rupture the membranes, and if hæmorrhage continues deliver by the safest method available.

3. In internal concealed, and in some cases of external, hæmorrhage, if a vital necessity, deliver by *accouchement forcé* or Porro's operation.

In all cases the ruling principle should be to proceed with as little force and precipitation as possible.

Dr. ROBERT BARNES congratulated Dr. Smyly on the successful exposition of an important subject. In reference to placenta prævia, he called attention to the fact that the uterus was divided into two sections divided by a line ; he felt justified in saying that the line of demarcation, to which a German had attached his name, had been described and figured by himself thirty years before. He objected to plugging—plugs were a delusion—the cervix could always be dilated gradually by the bags, thus avoiding all necessity for stretching the cervix by hand. His mortality had not been greater than Dr. Smyly's. With regard to accidental hæmorrhage he agreed that disease of the uterus leading to disease of the placenta was usual.

Professor BYERS (Belfast), speaking of placenta prævia, said that in those cases in which the os was so far dilated as to admit two fingers (and these formed the majority), they were all agreed that bipolar turning, bringing down a part, and then, if possible, leaving the delivery to Nature, was the most scientific plan of treatment. When, however, the os would only admit one finger he thought the use of Champetier de Ribes' bag was a great gain, as by it the cervix was

dilated, the hæmorrhage stopped, and when the bag was expelled delivery could be easily effected. As to the treatment of accidental hæmorrhage, he thought, if there were pains present, rupture of the membranes was good practice, enabling the uterus to contract, and to embrace firmly the child. By both these procedures bleeding was stopped. In cases of accidental hæmorrhage, in which pains were not present, he thought, with Dr. Smyly, it would be better to rally the patient first, and afterward to adopt the plan of delivery suited to each case.

Dr. MORE MADDEN (Dublin) thought that in discussing the hæmorrhages of the latter months of pregnancy it was desirable to retain Rigby's time-honored classification—namely, accidental and unavoidable. In the majority of cases of unavoidable hæmorrhage the discharge first showed itself during the eighth month. In such instances, if the hæmorrhage were frequently repeated, or serious, Dr. More Madden would protest against any merely expectant or temporizing treatment; the most effective methods safely practicable for the immediate arrest of hæmorrhage and completion of delivery should be adopted. The practice which he recommended was thoroughly to wash out the vagina with some antiseptic solution, and firmly plug from the vulva to the roof of the vaginal vault with sponges rendered perfectly aseptic by corrosive or carbolic solution, and then soaked in pure terebene. On the removal of this plug it would generally be found sufficiently dilated or dilatable to admit the surgeon's hand, and the accomplishment of immediate delivery by version. This, if performed with proper antiseptic precautions and in suitable cases, was hardly less safe, and was far more generally feasible than the methods of version by external manipulation. In the treatment of accidental hæmorrhage just before labor, the older methods of inducing premature delivery by rupture of the membranes, so as to evacuate the liquor amnii, stimulate uterine contraction, and thus effectually arrest hæmorrhage, was generally efficacious.

Dr. JAMES MURPHY (Sunderland) thought the great secret of success in the treatment of placenta prævia was to recognize the seriousness of the complication, and to take advantage of the preliminary warnings which were given by the hæmorrhages which almost invariably took place during the last months of gestation. Gestation should be terminated in every case in which the hæmorrhages occurred after the seventh month. The method of Dr. Barnes was the one that he adopted. Dr. Murphy said that his cases now numbered sixty-three, with only two deaths; one of these patients was moribund when first seen.

Professor MURDOCH CAMERON (Glasgow) said that in his own experience the hæmorrhage of the last two months of pregnancy had been due to faulty insertion of the placenta. He could not remember a single case of serious hæmorrhage during these two months resulting from normal attachment. It had been mentioned that Porro's operation had been performed for hæmorrhage. Such treatment he thought unjustifiable, more especially as he was convinced that the os uteri was easily dilatable. He had found Barnes' bags of the highest service, but at the same time, in general practice, plugging with linen napkins was good. Champetier de Ribes' bag he thoroughly condemned; its size was against it when the os was not well dilated; was also a drawback in the cavity of the uterus. In all cases of hæmorrhage the os was easily dilated.

Dr. WILLIAM DONOVAN (Erdington) said that in treating hæmorrhage the result of placenta prævia he still followed the plan taught by Dr. Harvey of Cork, some thirty years ago. This was that when hæmorrhage occurred in the seventh month of pregnancy resulting from placenta prævia the fingers should be passed into the vagina, the os dilated, and a foot brought down. In placenta prævia hæmorrhage he had found no difficulty in dilating the os and getting hold of a foot; that done he left the case to Nature. He had never used Barnes' or any other bags, nor had he used plugs, as he held it to be the duty of the obstetrician to terminate the case at once, and not to trust to anything less than version and a leg or foot brought down.

Professor W. L. REID said that he had been in the habit of trusting to antiseptic plugging in the early stages of both kinds of hæmorrhage. Since real antiseptic precautions were employed he had had few cases of septic mischief. The labors were ended mostly by version in a few by the forceps.

Mrs. SCHARLIEB, M. D., said that in abortion and in placenta prævia plugging was useful as an antecedent to Barnes' bags. The vagina must be rendered aseptic as far as possible. The best substance for the plug seemed to be iodoform gauze.

The PRESIDENT (Dr. J. G. Swayne) quite agreed with the remark of Dr. Smyly that hæmorrhage during the last two months of pregnancy most frequently arose from partial detachment of the placenta, but stated his belief that it often arose at a much earlier period, although it was difficult to prove that it arose so early from that cause. At the time of quickening a sudden rise of the uterus, so often arising from that cause or hysterical convulsions, so-called, which are so frequently observed at this time, may easily induce a detachment of a

portion of placenta, and be a cause of the daily hæmorrhages from that cause which go on persisting, and reduce the condition of the patient so much as to render the induction of abortion necessary.

Dr. BOXALL, speaking from his observations made some years ago at the General Lying-in Hospital, on the position of the placenta with reference to the cervix, was surprised to observe the frequency with which the dangerous zone was encroached upon, even without hæmorrhage taking place. In some hundreds of cases, at the beginning of labor, by means of a stylet armed with dye in a catheter introduced into the cervix, he stained the portion of the foetal envelope lying immediately above it; and after the delivery of the afterbirth, he measured the distance between the nearest margin of the placenta and the stain. This afforded the data necessary for the above observation, as in addition the time of rupture of the membranes was in each case noted. The reason for the absence of hæmorrhage in so many of the cases became apparent. It was found that when the membranes had ruptured prematurely no loss as a rule took place. This coincided with the result which was looked for in a well-recognized method of treatment in cases of partial placenta prævia, to wit, artificial rupture of the membranes. In making a routine examination of the afterbirth, he had also observed that where accidental hæmorrhage had taken place, as often as not evidences of previous hæmorrhage and often repeated hæmorrhages (as may be judged from the varying condition of the clots) were to be found on the uterine surface of the placenta and sometimes of the membranes as well. In many cases no external hæmorrhage had taken place, but usually the history of some accident, such as would be likely to cause premature separation of the placenta, followed by an attack of uterine pain and discomfort, and evidence of internal bleeding was forthcoming. Moreover it was observed that the foetus in these cases, if not dead and macerated, at any rate often gave evidence of recent interference with its due development varying in proportion to the amount of separation of the placenta. As a practical outcome of this last observation he wished to emphasize a point alluded to already in the discussion, namely, the advisability of inducing labor as soon as possible when hæmorrhage of any severity sets in during the last two months of pregnancy. This he would urge in the interest not only of the mother—and particularly when she could not make sure of immediate skilled attendance in case of need—but also of the child, and in consequence of risk to the life of the mother from recurring loss, and to that of the child from interference with its nutrition. The same reasoning applies to unavoidable as to accidental

loss, and he would urge the early termination of a pregnancy. He also remarked that when the placenta encroached upon the lower pole of the uterus it was at least as likely to be disturbed from its attachment and hæmorrhage to result as when situated normally and from the operation of similar causes. In such cases unavoidable might be said to complicate accidental hæmorrhage. Much had been said in the discussion as to the applicability of internal version and of the combined method to the treatment of placenta prævia; he wished to draw attention to the special applicability of external version to some of these cases, particularly where it sometimes happened the fœtus already lay in a transverse or oblique position. In cases of accidental hæmorrhage when the cervix was, as occasionally happened, insufficiently dilatable to admit the finger or hydrostatic bags, or when the latter were not immediately available he recommended that the vagina should be first douched with hot water (110° to 115° F.) and then if necessary the vagina tamponed with aseptic cotton wrung out of antiseptic solution. The hot water in itself tended to stay the hæmorrhage and to soften the cervix and by the addition of an antiseptic afforded an opportunity at the same time of disinfecting the vagina. For plugging the vagina he preferred pads of cotton tied together in the form of a kite tail so as to allow of easy removal.

Professor WRIGHT (Leeds) asked Dr. Smyly whether he had in any of his cases diagnosed the position of the placenta from external examination. He referred to the cases in which placenta prævia was detected chiefly by palpation before hæmorrhage commenced by Professor H. Spencer. Professor Wright concluded that at the present time, even if a case were diagnosed, premature labor should not be induced, as was advised but a few years ago. He quoted a case of fibroid with pregnancy, in which this treatment in a case of unrecognized placenta prævia led to a rapidly fatal result. Professor Wright also quoted a case of placenta prævia which occurred some years ago, in completing which the hand was passed through the middle of the placenta and the child delivered by version through it. This practice was still justifiable according to the rules laid down by Professor M. Cameron.

Mr. O'CALLAGHAN (London) wished to support the remarks of Dr. Smyly with regard to Porro's operation in certain limited cases of placenta prævia, and to say emphatically that there were cases in which it was the only hope held out to the women. The cases were not met with in the neighborhood of a well-managed maternity hospital, as they were recognized early and conducted to a successful

termination. But he had met them in the neighborhood of a large county town. In two cases he had been sent for a long distance into the country, and found the woman blanched and pulseless, with a history of hæmorrhage going on for weeks previously. He had emptied the uterus in the manner advocated by previous speakers, and before the child was delivered the woman died. These were the cases that justified Porro's operation, and should he ever meet with such a case again he would unhesitatingly stop the fatal hæmorrhage by this simple method, and give the woman her only chance.

Dr. AUST-LAWRENCE (Bristol) thought that a woman who was over seven months pregnant and who was bleeding to any definite extent or had evidence of internal bleeding ought not to be left until she was delivered. The best plan was to plug the cervical canal and the vagina with iodoform gauze, and to deliver slowly and with due care to avoid injury to the cervix.

Dr. SMYLY replied briefly. He considered that very frequently easy dilatation meant easy laceration, the cervical tissues giving way like wet paper. He considered that the not having seen a case of concealed internal hæmorrhage did not preclude its occurrence.

IMPERFORATE HYMEN; IMPERFORATE OS UTERI; HÆMATOMETRA; HYSTERECTOMY.

BY JAMES MURPHY, M. A., M. D.,

Surgeon to the Sunderland Infirmary, and Lecturer on Medical Jurisprudence University of Durham.

I am indebted to Dr. Morton of Philadelphia, County Durham, for this very interesting and curious case. Mrs. G., aged forty-two, married twenty-five years, had never menstruated nor suffered from any periodical troubles. She had enjoyed fairly good health till four months previously to my seeing her, when she was found to be suffering a good deal of pain in the lower portion of her abdomen on the right side, and was losing flesh. On admission into the infirmary a large fluctuating tumor could be felt extending an inch or two above the umbilicus, and situated principally on the right side. On introducing the finger between the labia, a *cul-de-sac* could be entered for two or three inches, beyond which no tumor could be found. By passing the fingers into the rectum, no tumor could be found, or any traces of a uterus, but the *cul-de-sac* could be inverted and protruded through the labia as one can turn out his trousers pocket. Abdomi-

nal section was performed, and a tumor was discovered covered by a thick layer of peritonæum, and was of a grayish color. The introduction of a trocar allowed the escape of some ten ounces of brown serum. On enlarging the wound, a large mass of organized blood clot was removed, and the uterus, for such it was, was then shelled out of what appeared to be the broad ligament, and was ligatured at its base by a silk ligature and removed. The broad ligament was then sutured to the abdominal wound, and as there was free hæmorrhage, it was plugged with iodoform gauze. The patient made an uninterruptedly good recovery.

Remarks.—This was apparently a case of imperforate hymen where the husband's energy, although not sufficient to rupture the hymen, was in the course of a quarter of a century, equal to stretching it to the extent of two or three inches. The patient also appears to have had complete atresia of the os uteri, but the curious point is that the womb seems to have hibernated till its owner reached the age at which most wombs become dormant, and then it seems to have realized its duties, with the results that I have related.

Sequel.—This patient had to be readmitted into the infirmary four months after the operation as the abdomen had become very much distended and she was suffering very severe pain. On opening the abdomen, it was found to be full of organized blood clot, all trace of the marsupialization of the broad ligament had disappeared and the stump of the cervix appeared in its normal position and on each side a fairly normal ovary. The clot (some sixty ounces) was cleared out and no bleeding point could be discovered, and the abdomen was washed and closed. She left the infirmary quite well in three weeks, but in a few weeks more she again began to swell, the swelling increased enormously and eventually burst open the cicatrix and for some days a brown serous fluid escaped, and then she died, having, in a most positive manner refused all treatment, and to the great regret of Dr. Morton and myself no post-mortem examination of the body could be obtained.

NERVOUS IMPULSES CONTROLLING MENSTRUATION AND UTERINE HÆMORRHAGE.

By E. TENISON COLLINS, M. R. C. S., CARDIFF.

In the following paper I propose to review the nerve theory of menstruation, and to supply a deficiency without which I think it is

untenable. The advocates of this theory advance the following arguments in its favor :

1. That a nervous center is situated in the lumbar enlargement of the cord.
2. That menstruation is the result of periodic and rhythmical changes in this center.
3. That menstruation follows the discharge of vasodilator impulses from the center coursing along the uterine nerves to the uterus.

The phenomenon of menstruation thus advanced does not, however, bear physiological investigation : first, there is no histological element in small arteries capable of dilating the vessel unless we fully accept Foster's suggestion that the relaxation of a muscular fiber is an active process. All vessels are normally in a state of medium tone or partial constriction, and their lumen is enlarged for functional purposes by vaso-inhibitory impulses which inhibit the contraction of the muscular coat. The theory of a nerve center from which the rhythmic discharge of impulses is so accurately timed is not in accord with what is known of other centers. Finally, the theory suggests an automatic center, which is most improbable. The nervous centers invariably act reflexly with regard to both visceromotor and vasomotor impulses. The respiratory, micturition, and defecation centers are all reflexly excited and the resulting movements are the effect of a reflex stimulation. The vasomotor changes similarly are the result of afferent impulses reaching the local controlling center. Thus the taking, sight, or smell of food produces reflexly vascular dilatation of the salivary glands and flow of saliva. The presence of food in the stomach and of digestive products and waste in the intestines is accompanied by free secretion of the various digestive fluids, vascular dilatation, and peristaltic movements. It is the presence of foreign matter acting as a stimulus which reflexly is the cause of these changes.

Pathologically the presence of a polypus in the rectum, a stone or growth in the bladder is characterized by increased muscular activity and hæmorrhage ; there is a discharge of visceromotor and an inhibition of vasoconstrictor impulses. In the uterus the chief symptoms of any intra-uterine growth or retained foreign body is hæmorrhage reflexly excited by its presence.

The theory I wish to bring before this Section for its consideration is "that uterine hæmorrhage, menstrual, or metrorrhagic, is invariably caused by intra-uterine irritation acting reflexly through a nervous center." Physiologically we have proof of the existence of such a

center, and nerve filaments have been traced into the uterine mucous membrane. I believe that this utero-ovarian center consists of two parts—a visceromotor controlling uterine muscular contractions intermittent in action, and a vasoconstrictor which is in constant activity, and only inhibited by the arrival from the uterus of afferent inhibitory impulses at the center. Stimulation of the uterine nerves causes either uterine contractions or change in caliber of its arteries, or both. The arteries are, as I have already mentioned, in a state of medium constriction. When, however, there is within the uterus any foreign body or pathological change of the lining membrane, impulses are generated which pass to the utero-ovarian centers and inhibit the discharge of vasoconstrictor impulses to the uterine vessels, and additionally cause the discharge of visceromotor impulses resulting in uterine contractions. Why? Because foreign bodies are discharged from the uterus partly by expulsive contractions, partly by a blood flux. Villous endometritis, retained pieces of placenta or decidua, subinvolution with pathological changes in the mucosa, and uterine polypi are all accompanied by hæmorrhage which invariably ceases on removal of the cause. In tubal disease hæmorrhage is common, but the tubes are embryologically part of the uterus. In fibromyoma the hæmorrhage is greatly dependent on the proximity of the growth to the intra-uterine surface, being most marked in the submucous or polypoid forms; uterine contractions are also said to occur. In all these causes the exciting element is the new growth, morbid material, or changed mucous membrane, and the chief afferent nerve conveying the impulses to the center is probably Johnstone's nerve.

In inflammatory diseases confined to the ovary, menstruation is frequently unaffected, but when by extension the tubes become implicated hæmorrhage occurs. In ovarian cystoma menstruation may be unaltered, or there may be amenorrhœa. It is possible that ovarian impulses may increase the discharge of vasoconstrictor impulses in contradistinction to uterine impulses which inhibit the discharges. In one form of cystoma, however, the small multilocular cystic ovary, one of the most constant symptoms is menorrhagia, but Mr. Lawson Tait has pointed out its frequent complication with fibromyoma of the uterus. Menorrhagia, too, is not uncommon in intraligamentous ovarian cysts close to the uterus, which probably by their contiguity and pressure lead to changes in the parenchyma spreading to the mucosa.

Apart from these local causes of hæmorrhage the center, like all others, may be affected by the quantity and presence of its blood sup-

ply and by drugs acting upon it. The menorrhagia of renal, hepatic, and cardiac diseases is thus explained. In anæmia and chlorosis, on the other hand, amenorrhœa is common, and is probably due to the altered quality of blood supplied to the uterus retarding or arresting the development of the menstrual decidua. Ergot stimulates the visceromotor part of the center, causing muscular contractions, and increases the discharge of vasoconstrictor impulses. Alcohol on the contrary inhibits vasoconstriction, and causes vascular dilatation. This effect is made use of in the use of hot hip baths, and warm gin given in cases of suppression of menstruation. Finally, the direct effect of the superintending influence of the central nervous system over local subsidiary centers is seen in cases of amenorrhœa due to fright.

Menstruation.—With respect to this phenomenon, I think the uterine mucosa undergoes progressive constriction for the reception and retention of the ovum. Failing this, having reached its highest state of development, it degenerates and becomes a foreign body, and so acts as a stimulus generating afferent impulses to the utero-ovarian center, the reception of which is followed by inhibition of vasoconstrictor and development of visceromotor discharges. On this point Mr. Christopher Martin says: "In the intermenstrual periods the organ is under the control of anabolic nerves, engaged in a constructive metabolism, preparing a decidua, building a nest for the expected egg. But should impregnation not occur within a definite period, the catabolic nerves assert their influence and menstruation occurs. The actively growing cells of the endometrium undergo a rapid destructive metabolism, the fabric of the half-formed decidua tumbles to pieces, the turgid capillaries burst and pour out the menstrual flow, which sweeps away the useless *débris*." Here, again, the discharges of automatic nervous impulses are suggested as the cause of the cell destruction, not that the cells having fulfilled their function decay, and so become the irritating means by which the vessels are reflexly dilated. The irritant also sets up reflex uterine contractions, and so the blood, according to Dr. Champneys, is squeezed out of the distended capillaries, and washes away the degenerated cells. This theory of morbid material acting as the stimulus is, I venture to think, a more practical solution of the uterine congestion than the somewhat vague theory of Leopold and others that it is due to "ovarian influence." Sometimes after impregnation menstruation continues for a time, showing that the uterus does not always adapt itself to its normal physiological contents, but treats it temporarily as a foreign body,

and the so-called abortion habit may thus be possibly accounted for. In pregnancy the presence of the ovum causes vascular dilatation and later muscular contractions, both of which favor the marvelous development of the uterine substance. Further proof of this reflex theory is seen in ectopic gestation, when the false decidua is expelled and hæmorrhage occurs. Mr. J. W. Taylor has also demonstrated in his recent paper On Intraperitoneal Hæmatocele that the hæmorrhage is commonly from the abdominal ostium in unruptured tubal pregnancy ; the hyperæmia being evidently caused reflexly by the presence of the foreign body in the tube, as a developing ovum necessarily is.

The Effect of Removal of the Appendages.—This operation is in the great majority of cases followed by arrest of menstruation. Of the various explanations that have been advanced, I shall only refer to two. Professor Sinclair states that arrest follows ligature of the ovarian arteries without removal of the appendages because the blood supply is cut off. This obviously is not the case, as the chief supply is by the uterine arteries. Mr. Christopher Martin suggests it is due to the division of the menstrual nerves cutting off the uterus from its nerve center. Both are, I think, partially correct, but ligature of the arteries also includes Johnstone's and other nerves which are, in my opinion, the afferent nerves. It is therefore the center that is cut off from the uterus, not the uterus from the center. The division prevents the transmission of impulses to the center, the vessels remain in a state of medium tone and the hyperæmia of the uterus can not take place. At the same time it is possible that the ovaries directly or indirectly influence the formation of the decidual membrane, and after their removal this ceases to be constructed. The absence of the stimulus and of the means of transmitting uterine impulses to the center results in amenorrhœa. In some cases after the operation menstruation still continues, and instead of an unusually deep course of Johnstone's nerve as suggested, I think it is more likely to be due to a pathological state of the mucosa stimulating subsidiary nerve endings which, in a healthy state, would not be called into play. Pozzi says : "There is one circumstance, moreover, which may favor the temporary prolongation of the menstrual nîsus, and it is the presence of changes in the uterine mucous membrane or parenchyma found in cases of fibroids and of obstinate oöphoro-salpingitis for which the appendages are removed ; and therefore in all these cases I hold that the major operation should be terminated by a complementary curettage." Again, "The cases in which menstruation persists seem often to depend upon a condition

in which some lesion of the uterus (endometritis, etc.) plays the part of an irritative stimulus." Sanger relates an interesting case of periodic menorrhagia after castration performed for retroflexion complicated by endometritis, in which he reopened the abdomen, and found no trace of the appendages. The hemorrhage ceased after curetting, showing the part taken by the endometritis in their production. Finally, the pseudo-menstruation following ovariectomy and salpingo-oophorectomy has been attributed to "the mechanical stimulation of the end of the divided menstrual nerve by the traumatism of the operation originating and propagating a series of impulses along the nerve to the uterus."* If this were the case then, the discharge should commence soon after the ligature is applied, and not two or three days after. The explanation, in my opinion, is that the utero-ovarian center, like its neighbor the micturition center, suffers from the shock of the operation, and is irresponsive to afferent impulses, necessitating, in the case of the bladder, use of the catheter. After a variable period the shock is recovered from, the center is able to respond to the impulses originated by the mechanical stimulation of the ligature, the discharge of vasoconstrictor impulses is inhibited, and a menstrual discharge ensues. This ceases as soon as the ligature is cut off from the center by the degeneration of the nerve fibers in the immediate neighborhood of the constricting irritant.

To sum up, therefore, the chief points in conclusion :

1. The uterus is under the control of a nervous center in the lumbar cord.
2. Hemorrhage from the uterus is either the result of a local uterine condition, or of influences outside the uterus acting directly on the center.
3. Menstruation is the result of stimulation of the center by the decaying decidual cells.
4. Removal of the appendages arrests menstruation by preventing the propagation of uterine impulses to the center.
5. Clinically in all cases of uterine hemorrhage it is of the first importance thoroughly to explore the state of the uterine cavity with a view to correct diagnosis and treatment.

Mr. CHRISTOPHER MARTIN (Birmingham) said that on most points he agreed with Mr. Collins. They both looked upon menstruation as a process due to and depending on a nerve center in the spinal cord, but Mr. Collins looked upon it as a reflex center, while he (Mr. Mar-

* Mr. C. Martin, Nerve Theory of Menstruation, *Brit. Gynecological Journal*, vol. ix.

tin) thought it was automatic. He quite agreed, however, that this center might be excited to abnormal activity by reflex excitation from the uterus, ovary, or tube. He had often looked for Johnstone's nerve, but could never find a nerve trunk worthy of the name. There were numerous nerve filaments, but no large trunk. The difficulty in investigating the physiology of menstruation was that it was a process peculiar to the human female, and did not occur among the lower animals. Hence we could not elucidate it by performing vivisection experiments. The subject was one that required further investigation, and most light would be obtained by careful clinical study of cases in which operations had been performed on the pelvic organs in the human female.

Dr. JOHN D. WILLIAMS (Cardiff) wished to state that while listening to Mr. Collins' valuable paper, he was carried back to the investigations which he conducted years ago upon the histology of the structures contained in mesosalpinx, during which he very carefully examined two hundred and ten pairs of broad ligaments, and in no instance could he say that he met with a nerve corresponding to the description given by Johnstone. Many nerve fibers varying in thickness, but all of a small size, were seen.

Abstract of a paper

ON SOME SYMPTOMS WHICH SIMULATE DISEASE OF THE PELVIC ORGANS IN WOMEN AND THEIR TREATMENT.

BY A. RABAGLIATI, M. A., F. R. C. S. Edin.,

Honorary Gynæcologist, late Senior Honorary Surgeon, Bradford Infirmary.

A typical case of what is often called ovarian neuralgia was described. Women, single and married, mostly nulliparous, but sometimes multiparous, complain of lumbar, iliac and ilio-inguinal pains, aching through to the back. They are fatigued, tired, listless, often with headache. Better in bed, though not much; but pain returns when they get up. The pains are much worse during and after the menstrual periods.

In the kind of case supposed, with no gross coarse disease of the pelvic organs, vaginal examination reveals nothing more than, say, a slight displacement; os, cervix, uterus, broad ligaments, and appendages being otherwise normal. In some cases a pessary seems to have relieved by its support, in others to have done harm. On the whole,

Boerhaave's phrase, "disease of a lax fiber" seems best to cover the laxness and want of tone which characterize the disease. In multiparæ the parts may be more swollen and lax, and there may be leucorrhœa, which, however, is often present also in the unmarried, though to a less extent.

Different doctors take different views and give different opinions regarding this condition. One calls it neurosis and says it is, "a nervous affection," another calls it neurasthenia, a third, hysteria, a fourth, perhaps, colic. The writer remembers two cases so diagnosed—not uterine colic, which is often present, but intestinal colic, which shows itself in wholly different symptoms. Another doctor diagnoses displacement, and still another, oöphoritis or salpingitis. After much suffering and failure to find relief from one member of the faculty after another, the patient is often induced in the end to submit to what she at first resolutely put from her, viz., removal of the appendages. Except for grave disease, for example, as severe adhesive oöphoritis, salpingitis suppurativa, etc. (of course ovariectomy for large tumors is not at present in question) the writer feels strongly that oöphorectomy is an unjustifiable operation. It unsexes the women, and for the most part fails to cure their disease. A better procedure, he thinks, is his own operation of cutting down on the umbilicus, rawing its edges, removing, if necessary, a finger depression of peritonæum, and bringing the edges together. This operation does not mutilate or unsex, and sometimes cures. It has always a most marked and beneficial immediate effect on the symptoms. The *modus operandi*, both of oöphorectomy and of this operation, are explained later. The writer believes, on the other hand, however, that as a rule neither operation is necessary, as the women can be cured without. As to oöphorectomy, although he has never known death from it (which would indeed be unpardonable as a result of operation for a disease never of itself fatal), still he has known long-continued suppuration from it and slow recovery. Also as a remote result he has known new miseries from pain arising about the wound, adhesions of the stump, and so on.

Proceeding with the examination of these women, the writer finds tenderness of the oblique muscles of the abdomen, of the recti muscles, of the umbilicus itself (usually excessive tenderness there), of the quadrati lumborum, of the sacro-iliac synchondroses in most cases, and also of the sacral origins of the glutei maximi muscles. These tendernesses are not, therefore, neurotic, as is commonly supposed, but are myotic or mysitic rather. They explain, the writer

suggests, the complaint made by these women, of being easily tired. The kind of pain also is an aching, such as is associated with trouble in muscles, rather than numbness, tingling, or smarting, such as characterize nervous involvement. Further, when investigation is continued, it is found that other muscles besides those named, are affected, for example, the solei and gastrocnemii, the vasti, both quadriceps extensors, glutei medii, erectores spinæ, latissimi dorsi, pectorales, teretes, sterno-mastoids, splenii, trapezii, etc., several other muscles being also named. Further than that, the writer points out that the sphincter vaginæ, the interior or pelvic face of the sacro-iliac-symphondroses, the obturator muscles and membranes, the gemelli and pyriformes muscles, etc., are all tender. He also shows that the pain caused by pressing the appendages is different from that elicited by squeezing the muscles, and says that he makes a point, in examining these women, of distinguishing these different kinds of pain.

The writer draws attention to this : Minor degrees of disease may exist he says in the appendages, for example, dilatation of the tubes due to salpingitis mitis ; or oöphoritis mitis may exist coincidently or simultaneously with these mysitic tendernesses ; and yet the latter are by far the main or chief cause of the complaints and sufferings of the women. In this way, when the mysitis has been dealt with, the women recover, even although the salpingitis or oöphoritis remain much as they were. Of course, treatment of the perimysitis exerts a beneficial influence on the salpingitis, etc., but the perimysitis is so much the more important affection, that the salpingo-oöphoritis can often be neglected. Nevertheless, it has hitherto been considered the main disease.

Discussing the nature of the myalgia from which these women suffer, he shows by a series of arguments that it is rheumatic in character : (1) It often comes on in women who have had acute or sub-acute rheumatism ; (2) It not infrequently results in acute or sub-acute rheumatism ; (3) As rheumatism affects joints, so does this affection, a true joint, like the mandibular articulation, being invariably involved, as well as the false sacro-iliac articulation, also the false joints of the sternum, and the sterno costal articulations ; (4) In women suffering in this way, the tarso-metatarsal joints, the metatarso-phalangeal articulations, and the metacarpo-phalangeal joints are apt to be affected. These are admittedly rheumatic affections, and so, the writer believes, is this. (5) In myalgia, as in acute rheumatism, changes are apt to occur in the heart. The only difference is that in this affection the changes are generally slow, in acute rheuma-

tism, rapid ; but in chronic and mild rheumatism the changes are slow also. The writer criticises adversely some of the views of Dr. Pye-Smith regarding rheumatism, and dissents from them. As the result of his reasoning and study of the affection, Dr. Rabagliati names it "perimysitis rheumatica." He says there is often found coincidently, perineuritis rheumatica, affecting, among others, the infra-orbital and supra-orbital nerves. The presence of tenderness over these and other nerves may have led to the general belief that the disease is a neurosis. But perhaps the main reason for this view has been that pains which are very severe at one place and time may have quite disappeared when we next see the patient. But this transitory and evanescent character is, it must not be forgotten, well marked in acute rheumatism also, in which affection it is very striking how a joint which is swollen and painful one day may be quite well the next, while another joint has become affected.

Along with perimysitis and perineuritis rheumatica is often found periostitis rheumatica, and even chondritis, which the writer believes to be rheumatica also.

The pain caused by an adherent inflamed ovary is quite distinguishable from the myalgic pain described, and besides in oöphoritis we can make out congestion and more or less fixation.

As to causation, the writer believes that the main cause is improper feeding, chiefly the bread and tea which these women mainly live on. In any case it must be the same causes which induce other sorts of rheumatism. Most of the women, even when quite young, have lost their teeth, a calamity due he believes to the same cause. The mode in which wrong feeding induces the myalgia is discussed.

As to treatment, the writer recommends placing the patient on a liberal diet, counteracting the rheumatism by appropriate remedies and washing out the waste from the blood by hot water taken an hour before food three times a day.

Finally, he lays great stress on the value of bathing, followed by methodized exercises calculated to put into action the often disused and pained muscles, and gives an elaborate series of directions for what he calls auto piestomyo-kinetics (or self-movement of muscles under pressure). This he much prefers to massage, which usually only implies kneading, rolling, etc., of the muscles, and no active contraction and expansion of them by the patient's own volition. He continues with a series of platinotype illustrations to show the recommended movements ; and concludes with references to a number of cases to illustrate the paper.

Introduction to a Discussion on

SURGICAL TREATMENT OF UTERINE MYOMATA.

I.—MARY SCHARLIEB, M. D., B. S.,

Physician to the In-Patients New Hospital for Women.

It is with the greatest diffidence that I venture to bring this paper before you, being sensible how small is my knowledge, how unripe my experience, as compared with many of my brethren and colleagues. My reason for asking your attention for a few minutes is that in the present unsettled state of professional opinion on the treatment of myomata every case faithfully reported may serve as an element in the construction of an authoritative teaching and useful practice.

The cases on which I base my remarks are twenty in number. In six I removed the appendages for the relief of hæmorrhage, in thirteen I removed tumor, uterus, and appendages, and in one the tumor only. The six women for whom I removed the appendages all recovered, and in all but one the symptoms were entirely removed. Two cases of hysterectomy terminated fatally from shock and one from sepsis. The others all recovered and are in good health. The six cases in which I removed the appendages were in no way unusual, and I followed in all respects the usual *technique*—removing the tubes as close to the uterine cornua as seemed practicable.

The methods adopted in all the cases of hysterectomy were approximately the same—median incision, ligation of the upper part of the broad ligament outside the ovaries and tubes, marking out and dissection of flaps of peritonæum from the anterior and posterior surfaces of the mass, ligation of the uterine arteries on each side, amputation at the level of the os uteri internum, with shelling out of any remaining nodule, scraping and disinfection of the cervical canal, sewing together the mucous surfaces; then the muscular layers of the stump; and, lastly, the peritoneal flaps which were folded in and sewn with Lembert's suture. Tears in the broad ligament were carefully repaired, and then the abdominal walls were closed in three layers—first, peritonæum; secondly, the muscles and their sheaths; lastly, skin. In five cases, the first three, the fifth, and the last, a temporary elastic ligature was used to control hæmorrhage. In all these cases there was some subsequent oozing, in all but one sufficient to demand drainage. In the remaining nine cases no temporary ligature

was used. The uterine arteries were secured as they are in vaginal hysterectomy, and all minor bleeding joints were tied or subjected to sponge pressure. There was no oozing, no drainage, and no complication during convalescence.

The lessons that have been forced on me are briefly these :

I. *The Necessity of Surgical Cleanliness as nearly Perfect as we can make it.*—With this object we prepare our patients thus : Baths : Disinfection of skin ; the abdomen is covered with a cotton pad soaked in 1 in 40 carbolic for forty-eight hours. Disinfection of clothes, of sheets, etc. Operator and assistants wear sterilized white overalls and caps ; their hands and arms are washed and scrubbed in two waters with soap and nailbrush, then soaked in Condyl's fluid, decolorized by saturated solution of oxalic acid, dipped in sterilized water, and finally soaked in sublimate solution 1 to 1,000. The instruments are boiled, and then laid in 1 in 20 carbolic lotion, which just before operation is diluted with boiled water. The abdominal pad is removed when anæsthesia is complete. The skin is wiped with perchloride solution 1 in 1,000, and the field of operation is surrounded with sterilized towels wrung out of carbolic lotion. These are renewed from time to time as they become soiled. The instruments constantly needed and likely to be laid down for a moment on anything near at hand are laid in a small dish containing carbolic lotion. The sponges are cleansed, boiled in sulphurous acid lotions, and then steamed with carbolic lotion. During the operation our hands are frequently dipped into warm sterilized water and sublimate solution. The cut cervical canal is at once disinfected with absolute phenol.

II. *The Importance of Injuring the Peritonæum as Little as Possible.*—It appears to be a mistake to sponge and to mop. If a bleeding point can be seen and secured it should be ligatured with silk of appropriate fineness. If there is general oozing firm pressure with a sponge or iodoform gauze will stop it, whereas mopping increases the flow. This is what we should expect. Do we not mop a scarified cervix uteri to make it bleed when we wish to deplete ? Again, it is well, if possible, to avoid the temporary elastic ligature. I began by using it, but found the peritoneal flaps oozed freely, and after all, of course, the uterine arteries had to be tied. In these cases drainage was necessary, probably from the injury inflicted on the peritonæum, which caused the oozing. Drainage is a risk in itself, although one which is often deliberately and rightly incurred to avert worse dangers.

III. *If the ovarian and uterine arteries are securely ligatured secondary hæmorrhage is unlikely and need not be feared.*

IV.—If the tissues composing and covering the stump are uninjured, and if infection from the cut cervical canal can be averted, the stump will remain aseptic, and will be less dangerous and more comfortable in the abdomen than if secured to the lower angle of the wound.

In my fourteen cases I have had but one case of sepsis: two patients died apparently of shock; eleven recovered without giving me cause for anxiety, and are now alive and well. To secure these objects I dress the cervical canal with absolute phenol, wiping away any excess of the acid. Then the mucous membrane is sewn together, next the uterine muscular tissue of the stump is sewn together, but not ligated with locking threads as is an ovarian pedicle, because such ligature interferes with the vitality of the stump. The uterine arteries are found and tied. Lastly, the peritoneal flaps are turned in and sewn together, so as to accurately fit the stump and leave no space. I have never seen the stump again, and do not wish to have the opportunity; but from the even run of the temperature I have no doubt that the surfaces rapidly adhere to each other, and that union by first intention occurs. In one case only has there been a purulent discharge from the vagina. Cystitis has not occurred.

CASE I.—Mrs. L., aged forty-two, widow; one miscarriage. Complained of abdominal pain and tumor, also of difficulty in defecation. Bladder not affected. Menstruation regular. On examination, a hard, elastic, multinodular mass was found, occupying the umbilical and hypogastric regions, and extending an inch and a half above the umbilicus. *Per vaginam*, a hard mass pressing on the rectum occupied Douglas' pouch and both lateral fornices. Sound entered at 3.5 inches. The patient, a charwoman, was entirely incapacitated.

Operation, November 29, 1892.—Median incision from just below umbilicus to one inch above pubes exposed a brick-red, multinodular tumor. Right ovary adherent to mass; adhesions broken down. The left ovary, represented by a cyst the size of a cocoanut, was inaccessible, lying under the left lobe of the myoma. A temporary elastic ligature was passed twice round the mass and secured. Anterior and posterior peritoneal flaps were fashioned and stripped down. The mass, consisting of uterus, tumors, and right appendages, was amputated about the level of the os uteri internum, and the uterine arteries secured. The cystic left ovary was then removed, and the elastic ligature relaxed, bleeding points tied, and the stump treated as described. The peritonæum was flushed, sponge dried, and the wound closed, a glass drainage-tube being left in lower angle. Toward the

end of the operation patient ceased breathing, but was rallied with artificial respirations, injections of ammonia and rectal injection of brandy and beef-tea. Convalescence was delayed by a large abscess between the skin and muscles, probably due to infection during artificial respiration; otherwise she did very well, and was sent to convalescent cottage on February 10, 1893. She is very well now, and in service as a cook.

CASE II.—Mrs. B., aged forty-five, married, four children and five miscarriages, complained of abdominal tumor, severe pain, floodings, and difficulty of micturition. Abdomen unsymmetrical. Tumor reached umbilicus. Sound entered 5.5 inches.

Operation, May 27, 1893.—Median incision umbilicus to pubes. Tumor immediately under muscular wall, having grown from anterior surface of cervix uteri, and having raised the peritonæum as it grew. The tumor was the size of an adult's head, and behind it was the body of the uterus, enlarged to the size of a five months' gestation. The tumor was first amputated, and then the uterus. The space left bare by removal of tumor was packed with gauze. Patient died at the end of sixty hours. There was no rise of temperature until immediately before death. There was no hæmorrhage (as evidenced on removal of gauze packing). The bowels had acted, flatus passed freely, and the urine was normal in all respects. Sickness set in directly after operation, and was the only bad symptom until shortly before death sixty hours afterward. No post-mortem examination was allowed, and I do not know what caused death, unless it was secondary shock from fright during a thunderstorm.

CASE III.—E. W., aged forty-eight, single, complained of abdominal tumor, hæmorrhage, and pain.

Operation, August 8, 1893.—Fundus uteri a little above the brim, the mass of the tumor occupying the pelvis, from which it could not be raised until the broad ligaments were ligatured and cut. The uterus and tumor were then drawn up with powerful volsellæ, and the peritoneal flaps marked out. The uterus was amputated at the level of the os internum, and the operation finished as usual. Time, one hour and a half; patient's condition good all through; convalescence satisfactory.

CASE IV.—S. E., aged thirty, single. Had suffered for years from excessive pain, profuse hæmorrhage, and a large abdominal tumor. The appendages of the right side had been removed in 1891 with temporary benefit, but the operator found it impossible to remove the appendages of the left side. On August 16, 1893, I operated, hoping

to relieve the intolerable sufferings. The tumor was an enormous fibroid uterus. On its anterior surface the left Fallopian tube (the size of the small intestine and about eight inches long) was densely adherent. The tumor was adherent to the transverse colon, the mesentery, sigmoid flexure, the small and large intestines, also to the pelvic floor and walls. It was, in fact, densely and universally adherent, except in front. The elastic ligature was used, and no profuse bleeding occurred, but the operation lasted two and a half hours, and was very difficult. The patient never rallied, and died after five hours.

CASE V.—Mrs. M., married, no children, aged forty-seven, complained of large abdominal tumor of six years' growth, and hæmorrhage.

Operation, November 10, 1892.—Incision from above umbilicus to pubes. Tumor extended three inches above umbilicus; no adhesions, but small nodules involved the uterine cornua and origins of tubes, so that the intention of removing the appendages was abandoned. The only difficulty in the case was an enormous dilatation of the veins of the right pampiniform plexus, many of which were the size of the little finger. In this case a temporary elastic ligature was applied, and there was considerable oozing, which necessitated drainage for five days. The patient made a good convalescence, and went into the country on the thirty-seventh day. I still hear that she is well and strong.

CASE VI.—Mrs. C., forty-one, married, no children, complained of tumor, pain, and disorders of micturition. She suffered alternately from retention and incontinence of urine.

Operation, January 26, 1894.—Incision from umbilicus to pubes, necessitated by very thick abdominal walls. The tumor extended into the left iliac fossa, and was adherent to the bladder, the rectum, and the pelvic wall. A second mass was encapsuled in the right broad ligament, and had to be shelled out of it. These two lateral masses were connected by the central mass of the enlarged uterus, in the anterior wall of which was a myoma the size of an adult head. Both ovaries were cystic. The operation was difficult, owing to the numerous and dense adhesions. It lasted two hours and twenty-five minutes, but the patient's condition remained good throughout, and she made a very satisfactory recovery.

CASE VII.—Mrs. C., aged sixty-four. No pregnancy, complained of abdominal tumor and falling of the womb, great difficulty in micturition, constipation and pain in rectum. On examination the abdo-

men seemed nearly filled with a soft indefinite mass, dull on percussion. *Per vaginam* uterus very low (procident when standing), left side of pelvis filled with a soft mass, apparently a part of the tumor felt per abdomen.

Operation, February 2, 1894.—Incision from umbilicus to pubes. On introducing the hand it was easy to pass downward toward the right side and upward, but to the left of the middle line there was a firm resisting sheet shutting off the mass. On dividing this the tumor appeared, but the incision had to be enlarged upward. The tumor was soft and pinkish white in color, it was easily shelled out, its pedicle at the left side of the fundus uteri was transfixed with silk ligatures and the flaps of peritonæum sewn together. The capsule was drawn together and a drainage-tube inserted. Patient's temperature never rose above 100° nor her pulse above 100. She went home on the twenty-seventh day. She remains perfectly well (December, 1894).

CASE VIII.—Miss L., aged forty-two. Complained of tumor, severe recurrent pain, menorrhagia; the periods returned every third week. Lower abdomen and pelvis filled with hard elastic mass. Sound entered 3 inches.

Operation, February 8, 1894.—Several masses, some adhesions; no unusual difficulties; very little blood lost; no temporary ligature; no oozing, drainage, nor complications. Operation lasted one hour and a half. Highest temperature, 100.4° F.; quickest pulse, 120, taken just after an attack of retching. Patient returned home on the twenty-fifth day.

CASE IX.—Mrs. S., aged thirty-eight, married, one premature child. Complained of tumor, pain, much dysuria; flow intermittent and painful; not much hæmorrhage. Abdomen large, unsymmetrical, costal angle very open; stomach resonance as high as fourth intercostal space. Hard elastic tumor, chiefly developed toward the left of the abdomen. *Per vaginam* a mass was felt behind the uterus. Sound passed 3.5 inches.

Operation, March 20, 1894.—Mass drawn up; amputated stump treated as usual. Highest temperature, 100° ; quickest pulse, 110. Left hospital on the twenty-fifth day.

CASE X.—C. T., aged thirty-six, single, complained of pain, profuse menorrhagia, and moderate, but almost constant, metrorrhagia. Micturition difficult; flow of urine intermittent. Mother and both maternal grandparents and other members of maternal family died of cancer. On examination, there was no abdominal tumor, but the pelvis was filled with the growths.

Operation, April 17, 1894.—Incision 3.5 inches long. Tumor drawn up with lion forceps. Ovaries examined and found cystic. The left ovary was removed, and then a fibroid nodule was shelled out of left broad ligament. The right broad ligament ligatured and cut; peritoneal flaps fastened; uterus with tumors amputated and stump treated as usual. Highest temperature, 100.8° ; pulse 104. Left hospital on twenty-fifth day.

CASE XI.—Mrs. T., aged forty-three, no child, complained of constant pain. Abdominal tumor and difficulty of micturition.

Examination.—Abdominal tumor, hard, elastic, non-fluctuant, reaching to within an inch of umbilicus. *Per vaginam*, hard mass in anterior fornix and right broad ligament. Sound entered 5 inches.

Operation, June 19, 1894, lasted one hour and forty minutes. Ovaries cystic; no complications; not drained. Highest temperature 100° , quickest pulse 100.

CASE XII.—Mrs. B., history of profuse menstruation for years, and nearly incessant hæmorrhage for four months; no interval of amenorrhœa; tumor up to level of umbilicus. Tait's corkscrew was introduced to draw mass forward. On separating adhesions the mass behind was found to be an extrauterine gestation. The sac ruptured during separation of adhesions, and about one quart of dark clotted blood was removed. The adhesions to the back of the uterus were so tough, and in separating bled so much that, considering the wound made by the corkscrew, it was thought better to remove the organ; this was done by complete hysterectomy. The patient made a good recovery, leaving the hospital well at the end of the month. She remains well (December, 1894).

CASE XIII.—Miss X., hæmorrhage, abdominal tumor; pelvis filled with a mass, round, smooth, and hard, rather larger than foetal head at term.

Operation, July 24, 1894.—On opening the abdomen the broad ligaments were ligatured and the myomatous uterus was amputated at the level of the os uteri internum. The cervical canal admitted two fingers, and through it the pelvic mass was felt attached by a pedicle; this was cut through; the abdominal wound closed, and the polypus delivered with midwifery forceps. The perinæum had to be incised to permit its passage, and was immediately douched and stitched. The patient did well up to August 3d; neither pulse nor temperature exceeding 100° . After this septic symptoms appeared, and she died on August 9th.

CASE XIV.—Miss D., very large tumor, severe hæmorrhage, and great distress from pressure.

Operation, July 27, 1894.—Mass multinodular, extending into both hypochondriac and the epigastric regions; extracted with difficulty; no adhesions; broad ligaments clamped; bladder stripped down; uterus and mass amputated; stump treated as usual, and broad ligaments oversewn. Mass weighed, when drained of blood, seventeen pounds. The patient made very satisfactory recovery, and is now able to resume her work as shopkeeper, December, 1894.

II.—J. STUART NAIRNE, F. R. C. S. Edin,

Surgeon Glasgow Samaritan Hospital for Women.

Resection of the Uterus for Fibroid Tumors and other Diseases.

Mr. NAIRNE considered the nomenclature of uterine tumors very unsatisfactory, and proposed to divide them into (*a*) neoplastic, (*b*) autoplasmic, (*c*) obstructive, (*d*) infective, (*e*) noninfective, (*f*) contagious, (*g*) noncontagious formations. The forms *a* and *b* might, however, also possess the characters of *c*, *d*, *e*, *f*, and *g*.

In operating, the incision in the uterus might be either transverse, vertical, or lateral. The requisites for success were rapidity and the use of specially toothed compression forceps; and the details of the operation comprised deep suturing of uterine fragments, elastic tourniquet, sponge pressure, and drainage.

In illustration three cases were related:

CASE I.—Age twenty-eight. Lobulated fibroids protruding through each side of uterus. The uterus was split on each side, and dissected off the tumor, the cavity of the uterus was opened and muscular fibers were removed along with the tumor. The fragments of the uterus were firmly stitched together. No drainage was employed. Subsequently pregnancy took place, and was followed by safe delivery.

CASE II.—Age thirty-one. Fibroid of uterus. A right lateral incision was made, and the tumor removed along with muscle. No drainage was used. Recovery took place, with restoration of normal menstruation.

CASE III.—Age thirty-four. Fibroid. A vertical incision was made in front. Muscular tissue was removed along with tumor, the cavity of the uterus being opened. Deep stitching was applied, and the uterus when stitched up was not much larger than a man's hand. The operation was followed by hæmorrhage *per vaginam* and great collapse, but ultimately recovery took place.

III.—W. J. SMYLY, M. D.,

Master of the Rotunda Hospital, Dublin.

Total Extirpation of the Myomatous Uterus.

The treatment of uterine myomata is still one of the burning questions of the day. In this communication I shall deal only with the last resource of surgery where every other means has failed or is deemed inefficient, and the removal of the offending organ is necessary. A number of methods for accomplishing this purpose are in vogue, and it would at present be impossible to state dogmatically which of them is best. Success depends not alone upon the particular operation selected and the peculiarities of each case, but even more upon the experience of the operator. It is remarkable how different are the results obtained by the same operation in the hands of different operators of apparently equal skill and experience, one obtaining excellent results by the extraperitoneal fixation of the stump, another by its intraperitoneal treatment, and a third by total extirpation; but incurring failure by deviating from the method to which he has become accustomed. The operator therefore requires not only skill and judgment, but also a special education in the performance of hysterectomy for myoma; and I should advise the beginner not only to practice but to adhere to the extraperitoneal treatment of the stump until he has at least thoroughly mastered the details of tying and dividing the broad ligaments and isolating and deperitonealizing the stump. Until 1892 I invariably followed the plan of operation formularized and so successfully carried out by Dr. Bantock. Since then I have resorted to it in one case only; in all sixteen cases, with three deaths.

I have never attempted Schroeder's intraperitoneal method, but I did employ Zweifel's on one occasion with an unfortunate result. The cause of death was shock, and I attribute it rather to other causes than the method of treating the stump.

I first performed total extirpation of the uterus, or panhysterectomy, in the autumn of 1892. I was obliged to employ this method, in a case of myomatous uterus, in consequence of malignant adenoma of the mucous membrane. The cervix being easily accessible, it was drawn down as far as possible and separated from its connections as in vaginal hysterectomy. The abdomen was then opened, and the entire organ, which was as large as an adult head, removed through the wound. The facility with which this operation was performed,

the comparative freedom from pain, and the rapid convalescence, made such an impression upon me, that I determined to resort to it in other cases also in preference to the extraperitoneal treatment of the stump. The dangers of the extraperitoneal method appeared to me inherent to the stump and removable with it; the extirpation of the cervix, therefore, while avoiding its risks, secures its advantages in the diminution of suffering, rapid convalescence, and lesser risk of hernia.

Panhysterectomy may be performed in three different ways: (1) by removing the organ through an abdominal incision; (2) *per vaginam*; and (3) by a mixed method, freeing the cervix below, and removing the entire organ from above, or by removing the body of the uterus from above and the cervix *per vaginam*. The methods are the same in principle and differ only in details.

In March, 1893, at a meeting of the British Gynæcological Society, I exhibited three myomatous uteri which had been successfully removed by total extirpation, and strongly advocated this method. Since then I have operated upon twelve other patients, making in all fifteen cases with two deaths.

Mixed method, 11 cases, 1 death

Abdominal " 2 " 1 "

Vaginal " 2 " 0 "

The first fatal case was my fourth. The tumor weighed when drained of blood twenty-two pounds. The patient came to operation in a very exsanguine condition. In ligaturing the left broad ligament I unfortunately wounded a large vein and a hæmatoma resulted. The hæmorrhage was considerable, and I lost much time in trying to remedy the hæmatoma but with only partial success. The patient was very collapsed after the operation and died in thirty-six hours.

Among the successful cases were some with very large tumors. One patient, whose uterus was as large as at the full term of pregnancy, had been under my care for many years. Her hæmorrhages were controlled by ergot until she had passed the menopause. Two years later hæmorrhage returned, and upon examination I found malignant disease of the mucous membrane. The uterus was extirpated, and she made an excellent recovery.

Another patient upon whom I operated in May last had reached the full term of pregnancy. She first came to me in February. The uterus was then found to be infested with myomata, and one tumor as large as a foetal head occupied Douglas' pouch, was quite immovable, and encroached so much upon the pelvic brim that no hope of

obtaining a living child could be entertained. I therefore advised the removal of the uterus at term.

On May 2d I opened the abdomen, drew out the uterus, and closed the upper part of the abdominal wound. The uterus was then opened as in Cæsarean section, and the child, a female, nineteen inches long and weighing six and three fourths pounds, extracted. In the meantime an elastic ligature, which had been loosely applied around the uterus, was tightened by my assistant, and the hæmorrhage controlled. The uterus was removed above the ligature, and I then proceeded to remove the tumor, which was below it, a proceeding which was rendered very difficult by the dense adhesions of the peritonæum which covered its upper third, and by the extraperitoneal development of the lower two thirds. The tumor having been removed and all bleeding points closed by suture, the cervix was extirpated *per vaginam*, the broad ligaments being secured by clamps. On examining the left ligament, however, I discovered a mass of tissue outside the clamp. Another clamp having been applied, the mass was removed, and upon examination proved to be a second non-pregnant uterus. Convalescence was delayed by a thrombosis in the calf of her left leg, but she left the hospital six weeks after the operation in perfect health with a living child.

The removal of the organ altogether from above is a more elegant, and probably a more rapid, method than the mixed operation. It was first performed in these countries by Mr. Bowreman Jessett, but he was evidently unaware that a similar operation had been adopted by Martin in Berlin two years previously. In his earlier operations Martin no doubt employed the mixed method, but for the past three years he has operated altogether from above, with a mortality of 9.5 per cent. I have had the advantage of seeing him perform this operation. The abdomen having been opened and the uterus drawn out, the broad ligaments were ligatured and divided down to the cervix, the peritonæum divided posteriorly by an incision uniting the wounds at the bases of the ligaments, and the tissues separated down to the vagina, which was opened, and the mucous membrane sutured to the peritonæum. The incision was then extended forward, freeing the cervix at the sides, and, lastly, the bladder separated, all vessels being controlled by sutures before being divided. A forceps was then passed up through the vagina, by means of which all the ligatures twisted into a rope, were drawn downward, and the peritonæum closed above so as to exclude the wound from the abdominal cavity. I have myself performed this operation in two cases, but unfortunately one of

them died of peritonitis on the third day. In that case the vagina was very long and distorted, so that its disinfection was very difficult.

In small tumors which do not extend above the umbilicus I prefer removal of the uterus *per vaginam* by *morcellement*. In the two cases in which I operated in this way I adopted the method of M. Doyen, of Rheims, which I had seen most skillfully carried out by Dr. Landau in Berlin. I was astonished to see that a large myomatous uterus could be sliced like cheese with little or no hæmorrhage. In one of my cases the fragments weighed two pounds and a half, in the other three pounds; both were nulliparous unmarried women, with narrow vaginas. During the two days previous to operation the vagina was thoroughly disinfected and packed with antiseptic gauze; Doyen uses a Gariel's air pessary. The vulva having been disinfected and the mons veneris shaved, the patient was placed upon the table in the lithotomy position. The cervix, seized on both sides with bullet forceps, was drawn downward and separated from its connections, the pouch of Douglas laid open, and the bladder pushed upward with the finger. A retractor having been placed between the bladder and uterus, the cervix was divided in the middle line in front with scissors, and two pairs of Muzeux forceps inserted into the lips of the wound; with these the organ was drawn further down, and the incision prolonged upward. In large myomatous uteri two lateral incisions, extending upward toward the cornua of the uterus, are required, and the tissue between, including any myomatous nodules which present in the wound, cut away. At last the fundus is drawn through the wound, and the uterus comes outside the vulva; up to this nothing is done to arrest hæmorrhage. The left broad ligament is now seized between the finger and thumb of the corresponding hand, and a long clamp applied from above downward; a second shorter clamp is applied to the base of the ligament from below upward for greater security, and the ligament divided. The other ligament is treated similarly. The small amount of hæmorrhage, the absence of shock, and the rapid recovery of these patients impressed me very favorably, and I think this an excellent operation; whether it will replace the removal of the appendages in cases suitable for the latter operation the future must decide.

IV.—Dr. HEYWOOD SMITH.

Dr. HEYWOOD SMITH congratulated Dr. Mary Scharlieb on the result of her operations, especially as she had in all adhered to the subperitoneal treatment of the stump. He was quite convinced that as

we had gone through the evolution of the treatment of the stump in ovariectomy, so also were we doing with the stump of amputated uteri; but it would be found that in spite of Lawson Tait, Bantock, and others, who still as a rule insert the clamp, many operators were pursuing with success the subperitoneal method. Mr. Nairne's method of operating is so new and his results so startling that he hoped that his diagrams would yet be given to the profession. That a uterus can be operated upon, tumors cut away, the uterine cavity opened, and the uterine remnant so trimmed and stitched up as to be able to bear a child, was, to say the least, remarkable. When they came to Dr. Smyly's paper it was exceedingly interesting to hear the various methods of operating on uterine fibroids, and in his hands with fairly even results. With regard to panhysterectomy, the simplest way was to operate simply through the abdomen, and so snip all round the cervix till the vagina is reached; the mixed way had the disadvantage of necessitating operating first in the vagina, then in washing of the hands, turning the patient on her back, and doing a fresh operation. There is no doubt, however, that after all precautions vaginal hysterectomy is a much safer operation than any other method. Even with a narrow vagina and other difficulties, given the possibility of getting a fibroid through the pelvic outlet, vaginal hysterectomy is the method that gives the best chance of recovery. While we are convinced that the removal of uterine fibroids is in many cases a necessity, yet the best means of doing it is not yet determined.

V.—Dr. RABAGLIATI.

Dr. RABAGLIATI asked with all diffidence whether, in the treatment of uterine fibroids, the profession was not becoming too surgical. Uterine fibroids played remarkable freaks—disappearing with rest in bed, sometimes without rest. He had seen fibroids disappear with pregnancy, so that, where Cæsarean section had to be performed, hysterectomy might be an unnecessary complication of the operation. To save organs, as Mr. Nairne said, ought to be one of our main objects, and an organ ought to be sacrificed only if life could not be preserved without it.

VI.—Dr. CULLINGWORTH.

Dr. CULLINGWORTH congratulated Mrs. Scharlieb on her paper, and especially on the impartiality with which she had approached the subject of her paper. She had not appeared as the advocate of one

method of treatment or another, but had given an unbiased account of her results in each of the methods she had adopted. In regard to the method of treatment by removal of the uterine appendages, he had had occasion recently to look up the literature of the subject, and he found that the results of this operation had not been published in sufficient number or in sufficient detail in this country to enable a true estimate to be formed as to its value. What was wanted, especially at the present time, was a series of clinical histories of uterine myomata, in which there had been no interference, so as to furnish us with material for knowing more than we now know of the natural history of the disease.

VII.—Dr. TRAVERS.

Dr. TRAVERS asked Mrs. Scharlieb the percentage of cases operated upon compared with those seen, and the ultimate capability of her cases to do hard work. High death-rate, from cases being postponed too long, partly arose from the very strong opinion by some well-known authority that death from fibroid is all but unknown.

VIII.—Dr. AUST-LAWRENCE.

Dr. AUST-LAWRENCE spoke on two points: 1. The great importance of having fibroid cases watched to see if they would improve under general treatment before resorting to operation. 2. On the necessity of operating on some poor women because they can not rest, etc., having in fact to risk their lives to earn their living.

IX.—Dr. F. BARNES.

Dr. BARNES asked if it was consistent with the experience of those who were familiar with these cases that fibrous tumors of the uterus seldom caused danger, and did not justify operation.

Dr. SCHARLIEB'S REPLY.

Dr. SCHARLIEB said the appendages were seldom healthy, many ovaries being cystic, tubes inflamed, etc. The choice of operations lay between removal of appendages and hysterectomy. The multinodular when small would cease to cause hæmorrhage, and dwindle when appendages were properly removed. The uninodular were different, and were uninfluenced by removal of appendages. Electrical treatment was sometimes successful, often unsatisfactory, some-

times fatal, and only succeeded when appendages were healthy. Myomata did kill, and frequently prevented women from earning their living. The fatal case mentioned in the paper died from anæmia. Some patients were earning their living as cooks and charwomen. She had had no ileus and no hernia in sixty-four cases of abdominal section. All her cases had long been under treatment.

MR. STUART NAIRNE'S REPLY.

MR. NAIRNE said he had already defined the meaning of the word "resection" as used by him. He distinguished it from hysterectomy and enucleation. It meant that after the tumor and such part of the uterus as was found intimately adherent to the tumor were removed, the fragments of the uterus were stitched firmly together, the remnant being as nearly as possible a retention of the uterine organ on a smaller scale. In reply to Dr. Barnes, he was decidedly of opinion that fibroid tumors of the uterus, whatever was their size, were very rarely fatal—were, in fact, only so from the two, not always present, conditions of hæmorrhage and malignancy, and that if these two conditions could be controlled or altered by other means, operations such as hysterectomy and panhysterectomy, with their fearful mutilations, were quite unjustifiable. He spoke in this matter with a great amount of feeling and certainly from no want of knowledge, as, counting private and public practice together, he could not be seeing fewer than from thirteen to twenty cases of fibroids every week, and the number of his operations had not been small.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

November 16, 1894.

The President, FRANKLIN H. MARTIN, M. D., in the Chair.

Dr. E. C. DUDLEY presented a

Deodorizing Lubricant for the Hands and Instruments in Gynæcological Examinations and Treatments.

In presenting this lubricant he remarked, that where the natural secretions were profuse, artificial lubricants were unnecessary, except as protection to the examiner's hands from infection. All lubricants

should be aseptic and non-irritant. Olive oil and vaseline are often septic. Soap strong enough to be aseptic is irritating to the vulva. He had found glycerin to be a lubricant both aseptic and deodorant; even the foul odor of cancer disappearing after washing with water simply, when glycerin had been previously applied to the hands. The special lubricant which he presented to the Society was composed of glycerin, starch, tragacanth, boric acid, and oil of wintergreen. Made at his request by Messrs. Parke, Davis & Co., under the formula known as No. 153,729, put up in soft metallic, collapsing, sealed tubes, from which it can be expelled by compression, thus preventing all infection of the emollient itself. It should be applied to dry fingers. He commends this lubricant as absolutely non-irritant, aseptic, and deodorant. The hands and instruments require to be washed with water only to remove all odors when this lubricant has been used.

EXHIBITION OF CASTS OF MYOFIBROMATA OF THE UTERUS, WITH DESCRIPTION OF A NEW OPERATION FOR THE REMOVAL OF SUCH TUMORS.

BY NICHOLAS SENN, M. D.

Two very artistic models prepared by Dr. Fuller, of Grand Rapids, Mich., were presented, representing myofibromata of the uterus. The first, giving an external view of a uterus studded with numerous interstitial and submucous growths. The second an internal view of the same, the uterus being laid open. A close examination of these casts illustrates Dr. Senn's method of performing laparo-hysterectomy in such cases, which he describes as follows:

"After ligating the broad ligaments in the usual way, it is my custom to make a circular incision around the uterus, dividing the peritonæum and subperitoneal fascia; I then deperitonize the lower segment of the uterus to a sufficient extent to make a cuff, which is sutured to the lower angle of the wound, uniting peritonæum to peritonæum, after which the uterine arteries are tied separately; no use is made of elastic constriction. In this specimen the entire organ is removed. After the uterus has been brought forward into the lower angle of the incision, the upper part of the wound is closed by suturing, which renders the part of the uterus to be removed extraperitoneally before the amputation is made. If the cervix is left after the

amputation of the uterus the cervical canal is closed by one row of buried catgut sutures. Hæmorrhage after ligation of the uterine arteries is very moderate, and is consequently very readily controlled by a number of rows of buried sutures, for which I invariably use chromatinized catgut. This leaves a funnel-shaped depression in which we find the cervical stump of the uterus. I believe this method possesses all the advantages of the intraperitoneal method minus its two particular dangers—hæmorrhage and sepsis. Hæmorrhage is completely under control, and the stump is rendered extraperitoneal by sewing the cuff of the lower segment of the uterus to the parietal peritonæum of the abdominal wall in the lower angle of the wound, and closing the balance of the wound by suturing; all I found necessary was to ligate both uterine arteries and to control parenchymatous oozing with a number of rows of buried sutures. A little parenchymatous oozing takes place after the patient recovers from the anæsthetic, and this is controlled by tamponing the cuff with iodoform gauze. About twenty-four hours after the operation the gauze is removed and the secondary sutures tied, after which, as a rule, primary union of the wound takes place."

Dr. Senn claims that in laparo-hysterectomy performed in the usual manner, without subperitoneal removal of the lower segment of the uterus, accidental injury to the ureters, bowel, and bladder are not uncommon accidents. All of these complications can be prevented by removing the adherent part of the uterus subperitoneally.

He has performed this operation *twenty-two* times without a death or a single untoward symptom in any of the cases.

DISCUSSION.

Dr. BYRON ROBINSON: I fail to see the newness of Dr. Senn's operation in certain respects. Those who are well acquainted with Keith and Tait know that there was a difference between them about seven years ago on this question. Keith did an enormous number of abdominal hysterectomies with great success. As a member of the Edinburgh Medical College, Tait had a right to see these operations, but Keith absolutely refused to allow it. Tait found out, however, why Keith had so many beautiful recoveries. Tait made a circular incision around the uterus and stripped down the peritonæum. I understand that Zweifel in 1888 did this operation of ligating the pedicle in four parts and letting it shrink extraperitoneally. The idea of tying off the arteries was used by Baer, of Philadelphia, some time ago, and by Goffe and various others. This extraperitoneal

cuff operation was done by Tait five years ago. My view of this operation is that it is a strong accentuation of the preceding processes. Tait removed forty myomatous tumors without a death. The stripping down of the peritonæum is an old and important procedure. So far as I can get at the statistics, the ureters have been tied in a great many cases. For three years I have stripped the peritonæum down from the cervix, because I found that the patient had an easier recovery. The main thing about this operation, it seems to me, is the scooping out of the myomatous uterus and bringing the cuff to the top and making drainage, which Tait used to practice continually. The weak point in Dr. Senn's operation is, in my opinion, leaving the cervix. The cervix is most liable to malignant disease. When the uterine and ovarian arteries are tied the uterus can be easily removed, for hæmostasis is complete. It seems to me better to entirely scoop out the neck of the uterus, because this is the degenerated portion.

I have practiced the method which Tait taught me, for I found that in removing myomata in this way I could not only avoid traction on the viscera, which induces vomiting, pain, and nervous derangement, but that this also enabled me to stitch the peritonæum above and even below the Kleeberg ligature, which I have frequently used. Tait taught years ago that dragging on the uterine stump was detrimental, and to avoid this he substituted a long piece of peritonæum. I have also seen Tait sew the peritonæum into the abdominal wound, so that the general peritoneal cavity was well excluded. After the abdominal cavity was closed the stump could be treated at leisure. In following the method which Tait taught me I found the patients made a smooth recovery.

Dr. HENRY T. BYFORD: Although there undoubtedly are advantages in this method, it is one which can not, I think, be applied to the worst cases. I have had one case in which the tumor surrounded the ureter. Extensive development in the broad ligament would leave a broad ligament space which would necessarily be included in the cuff and would preclude the possibility of primary union. I think perhaps a little more emphasis has been placed upon working extra-peritoneally within this cuff than is necessary. When we open the abdomen we cover up the intestines to get them out of the field before applying the ligatures, and can include the uterine artery with the first set. I hardly see why it is necessary to have a cuff to ligate the uterine arteries in, if you ligate them, along with the broad ligament, before the cuff can be made. You can separate the stump from the peritoneal cavity by stitching the bladder peritonæum over it, without

lifting it up to the abdominal wall, and you have only a little space behind the bladder in which there is liable to be any oozing. This can be drained in many ways; it can be drained through the cervix, as Goffe, of New York, did; the anterior wall of the cervix can be split, as I have done in one case, putting a piece of gauze through into the vagina; or the stump can be sewed with catgut and the ends of the sutures pulled down through a slit in the anterior vaginal fornix and left as a drain. In Hegar's operation with the elastic ligature the stump is fixed extraperitoneally by stitching the peritonæum around under it; and the same has been done with the ligatured stump by Wölfler, Hacker, and others. I hope Dr. Senn will tell us, in closing, whether in all these cases he was able to take out the gauze, unite the abdominal wall, and secure union by first intention. We know that if primary union of the abdominal wound be not obtained there must be granulation, and in a great many of such cases hernia will follow. I think the method of stitching or suspending the stump to the abdominal wall after abdominal hysterectomy is rapidly getting old, and that not even the improvements of a Senn, a Price, or a Bantock can rejuvenate it. Abdominal fixation or suspension of the stump is a makeshift method, and will survive as such only in exceptional cases.

Dr. E. C. DUDLEY: I can add very little to what has already been published relative to my own methods in the surgical treatment of uterine myomata. Nearly six years ago I reported to this Society a case in which the principle laid down by Dr. Senn was used in the surgical treatment of a uterine myoma. Since this time I have operated by this method very often. The operations have differed from those of Dr. Senn somewhat in detail, but not in principle; that is, I have enucleated the tumor, and with it removed whatever part of the uterus it was necessary to take with the tumor, and then stitched the sac from which the tumor had been taken to the abdominal wound by means of catgut sutures. It is the principle of Volkmann in the treatment of abscess of the liver, and of Lawson Tait in the treatment of pelvic abscess.

I have quite recently learned that Dr. Polk, of New York, described substantially the same operation before the New York Obstetrical Society in January, 1888. Dr. Senn's method of operating is new in some matters in technical detail. The objection urged by Dr. Byford—that is, the possibility of hernia—is pertinent. Even though under the skillful hand of Dr. Senn hernia has not often occurred, it will occur under the hands of the average surgeon.

In what class of cases is this particular extraperitoneal method applicable?

Undoubtedly when the tumor can be enucleated without sacrificing the uterus and its appendages, the sac may be advantageously stitched into the abdominal wound and packed with gauze. Under these circumstances we have a safe operation which preserves the reproductive system. The principle is undoubtedly not only sound, but its application is imperative.

The conditions, however, are changed when we have to decide between the utilization of the peritoneal cuff and the method of hysterectomy used by Dr. Baer, of Philadelphia. In both procedures the reproductive system is destroyed, and the question therefore becomes, first, which operation is safest for the patient; second, which operation is followed by the most uneventful recovery. As yet there is no evidence to show that the peritoneal cuff method offers for the patient any greater safety than hysterectomy after the method of Dr. Baer. I think no one will deny the general proposition that any abdominal operation which permits us to close the abdominal wound will usually result in a much more comfortable convalescence than an operation which does not permit the immediate closure of the abdominal wound. In this respect the operation of Dr. Baer has a decided advantage over that of the peritoneal cuff. If it should be found, however, that the peritoneal cuff operation can be done more rapidly and with greater consequent safety, it would be the operation of election. It is probable, however, that the separation and suturing of the peritoneal cuff would require much more time. The operation, however, is based upon a sound surgical principle. The essayist is to be congratulated upon his success in the application of this principle.

The evolution of surgical treatment of uterine myomata has been very much like that of ovariectomy. Ovariectomy was first performed by the intraperitoneal method of treating the pedicle, then the extraperitoneal treatment of the pedicle became the recognized procedure. This was before the days of antiseptic surgery, when the clamp was safer than the ligature; now the intraperitoneal treatment of the pedicle is established upon a permanent basis. In myomectomy history has repeated itself—first, the intraperitoneal treatment of the stump; second, the extraperitoneal treatment rendered necessary on account of the difficulty of intraperitoneal hæmostasis; and now, finally, the intraperitoneal method in myomectomy bids fair to become universal in cases in which the uterus and its appendages have to be sacrificed. The one condition which has hitherto been wanting is now supplied

by ligaturing the uterine and ovarian vessels and thereby shutting off the blood supply. This renders the operation bloodless.

It seems to me extraordinary that the very first men who ever attempted myomectomy did not realize the surgical necessity of first shutting off the blood current by ligaturing these vessels. Instead of this, for a quarter of a century we have been groping about in the dark searching for a method by which we could secure intraperitoneal hæmostasis. Just as soon as Baer and others began to ligature these vessels the whole proceeding became simple. It is the old story of Columbus and the egg over again.

Intraperitoneal hysterectomy for uterine myomata is feasible and safe and has come to stay. The peritoneal cuff operation can not be hailed with that delight which it would have excited a few years ago. I would ask Dr. Senn if, in stripping down the peritoneal cuff in a very anæmic case, he does not find it necessary to apply a temporary rubber ligature around the cervix. Sometimes the blood in this operation seems to come from a thousand vessels and to be uncontrollable by catching up one or two vessels as it flows from a broad surface.

Dr. J. H. ETHERIDGE: I have had so little experience with the operation Dr. Senn speaks of that I do not consider myself capable of adding anything to the paper. I would like to ask Dr. Senn, however, what he would do with a tumor, developed wholly from the posterior wall of the uterus, that he did not want to remove entirely. He would have difficulty in bringing the cuff up over the uterus to the lower end of the wound.

Dr. D. A. K. STEELE (present by invitation): I would ask Dr. Senn to describe more in detail the technique of the operation in cases in which the tumor grows into the broad ligament. I would also ask if he has any particular method to prevent an accumulation of fluid in the sac after the abdominal wound is completely closed, which may become infected from the vagina, and if these complications occurred in any of the cases he reports. Dr. Senn's success has certainly been all that could be desired.

Dr. WATKINS: Gangrene of the remaining portion of the uterus, which is so much feared by Dr. Jaggard and Dr. Robinson, is prevented by the circular artery of the cervix, which anastomoses with the vaginal arteries. The circular artery is not usually tied, because it branches from the uterine artery a considerable distance from the uterus. If, however, the circular artery is tied, this anastomosis will prevent death of the remaining portion of the cervix.

Dr. Senn gives as the advantages of his operation prevention of

hæmorrhage and infection. He controls hæmorrhage by ligating the ovarian and uterine arteries and by tiers of sutures. He eliminates the danger of infection by the removal of the mucous membrane in the remaining portion of the uterus, and also by tiers of sutures. If Dr. Senn's hypotheses are correct I can not appreciate why he makes the peritoneal cuff, the sole purpose of which is apparently its own drainage.

Dr. Senn's well-known skill would, I think, enable him to obtain equally good results without the use of the peritoneal cuff.

The fear of hernia following the operation, which others have alluded to, is, in my opinion, well founded. Any peritoneal depression or opening will permit the intestines to insinuate themselves therein and hernia will result.

Dr. H. P. NEWMAN : One important point is that Dr. Senn operates extraperitoneally. Although the cuff operation has been done before, it has not been done in this manner, and I see certain advantages in Dr. Senn's method. The models are certainly beautiful, but it occurs to me that very few tumors will present so uniform a development. This operation is especially adapted to large and formidable single growths. Multiple fibroids often have a much more irregular development and extend out in all directions, which makes this operation extremely difficult or almost impossible. In such cases there is great danger of ligating the ureters. The collateral circulation, from branches of the vaginal artery alone, is, I believe, ample to supply the cervix and prevent necrosis or gangrene. There might be, however, serious difficulty in draining after the removal of the gauze, which, as I understand, is removed at the end of twenty-four hours. I would suggest, in connection with this operation, that wicking be carried through the dilated cervix or through an opening made in the vagina. The present method of sterilizing the vaginal tract and cervical canal would render this perfectly safe, and if it were allowed to remain after the removal of the gauze packing in abdominal wound the rather deep pocket would be drained to the very bottom. I should otherwise feel some hesitancy in subsequently closing in the manner the doctor indicated. I would like to ask Dr. Senn about the necessity of drainage after removal of the gauze packing.

Dr. FERNAND HENROTIN : In case of a fibroid in the folds of the broad ligament which necessitates splitting the broad ligament to effect enucleation, how would you make the cuff ?

Dr. J. T. BINKLEY : I would ask Dr. Senn if he brings the cuff posteriorly snugly or loosely into the wound.

Dr. NICHOLAS SENN, in closing the discussion, said : For a long time I have entirely dispensed with the use of elastic constriction. I make a circular incision after the broad ligaments have been tied, being careful not to cut through any of the large subserous veins, section of which causes most formidable hæmorrhage. Any little vessels that bleed are caught in hæmostatic forceps, surface bleeding is controlled by pressure, so that I have found absolutely no indication for elastic constriction, even as a temporary measure. I believe in all cases, if the incision is made carefully and large vessels are avoided, there is no danger of incurring serious hæmorrhage. I think I never encountered the loss of more than two ounces of blood in any of these cases.

I intentionally brought here the cast of a small uterus. I have removed a uterus with a myofibroma that weighed forty pounds, and believe that the larger the tumor the easier the operation, the smaller the tumor the more difficulty in deperitonizing ; so I believe this method is particularly applicable for large tumors.

I was somewhat surprised when Dr. Byford mentioned as a contra-indication to this operation cases in which the ureter is imbedded in the tumor. I hardly understand what he means by the ureter being imbedded, because to me this appears to be a pathological incompatibility in connection with a non-malignant tumor of the uterus. I believe if there is any well-established pathological law it is this, that a benign tumor, no matter what organ it may involve or how it may be located, never surrounds an adjacent structure, but rather displaces it. I can readily conceive of cases of myofibroma of the uterus in which the ureter might be lodged between two tumors, but the ureter is always extraperitoneal, and I believe such a case would be particularly adapted for this operation.

I think there must be some misconception in Dr. Byford's mind relative to my method of drainage. I placed particular stress upon the fact that I depend upon extraperitoneal drainage ; I do not intend to drain in the direction of the vagina, because I abhor the drainage through the vagina. Notwithstanding what has been said in reference to the possibility of rendering the vagina aseptic, I have very little faith in it.

I have very little to say as to the priority of this operation. The method is based upon certain principles, some of which I must certainly claim as new. In the first place, I insist that this is in a double sense an extraperitoneal laparo hysterectomy. I believe it is generally recognized by gynæcologists that all abdominal hysterectomies

that require a long time are dangerous operations. It is the prolonged exposure of the contents of the abdominal cavity to the air and to contact which is liable to cause possibly fatal shock. As by this operation the uterus is rendered extraperitoneal in ten or fifteen minutes, I would not be afraid to spend two hours afterward, if necessary, to complete the operation.

This operation is also adapted for complete hysterectomy, as is shown by the specimen, which represents the entire uterus removed, though I insist that in performing abdominal hysterectomy for myofibroma the less healthy tissue removed the better the success. I do not favor resort to prophylactic processes for the purpose of preventing a possible carcinoma, because I do not believe there is any operation, even removal of the entire cervix, that will prevent the possibility of carcinoma somewhere in the genital tract. The preliminary closure of the abdominal cavity or making of this cuff may have been done, but I doubt if it has ever been made a systematic procedure; because if you will read Keith's monograph on this subject giving thirty-five cases of laparo-hysterectomy, you will find an entirely different description of the operation, with two deaths—a wonderful result at the time; but now, owing to the improvement of the operation, hæmorrhage and infection are avoided. My recollection is that both Keith and Tait followed the example of Koeberlé and resorted to constriction of the stump as a hæmostatic measure, the very means I speak of as a fruitful source of infection.

I early abandoned elastic constriction in treating the stump, because when I first conceived the idea of extraperitoneal laparo-hysterectomy it was for the purpose of minimizing the danger of infection by the use of the elastic constriction, so I proceeded systematically to ligate the uterine arteries either at the time the cuff was made or later. The uterine artery is not tied low down, but in making a circular incision the lower part of the artery is preserved and there is no danger of gangrene of the remaining portion of the uterus, and never will be. I aimed to eliminate the danger of vaginal infection by closing the cervical canal with one row of buried sutures; then, with a view of arresting parenchymatous oozing—which is never troublesome, but might become so—I inserted three or four additional rows of sutures, thus making an extraperitoneal stump. This stump is not anchored in the wound, hence there is no painful or harmful tension, but the stump is allowed to sink back three or four inches, if necessary, leaving a conical space; and as an additional protection against hæmorrhage, and to secure adequate drainage, I temporarily tampon this

wound with iodoform gauze for the time required to absorb the primary wound secretions. I have found this an exceedingly useful expedient. At the end of the first twenty-four to forty-eight hours I have usually found the dressings saturated with bloody serum, but little or no secretions after this time.

I must take serious issue with Dr. Byford in reference to the liability of ventral hernia following this operation. I believe if any operation is intended to prevent ventral hernia this is the one, because secondary suturing of the granulating wound will bring about the same result as suturing an aseptic wound—an assertion made years ago by Billroth and sufficiently supported by clinical experience since his time. A granulating wound can be safely united, with the expectation of a primary and firm union, in the same manner and time as a recent wound. I believe, therefore, that you can leave the wound surface exposed to the action of capillary drainage, and that there is absolutely no danger of retention of the primary wound secretion.

I must also take issue with the speaker who expressed serious doubt as to the efficiency of this drain under such circumstances. He believes drainage ought to be established at the lowest point—the old doctrine, that has become flesh and blood to the profession and is very difficult to annihilate. It is applicable for tubular drainage, but not for capillary drainage. When a capillary drain is used, it is not material whether the drainage is expected in an upward or downward direction. I must insist, therefore, that this operation presents at least the most important details in its technique which entitle it to be called a new operation.

In reference to the question asked as to the procedure I would resort to in cases of myofibroma involving the posterior wall of the uterus, I believe, if I deemed it necessary to remove the uterus entirely or in part, I would proceed exactly in the manner I have described. Whether the tumor extends into the folds of the broad ligament, or whether it involves the posterior walls of the uterus, is immaterial as long as the deperitonizing is carried far enough. I believe the operation is well adapted for cases of multiple myofibroma. The space between the incision and the broad ligament, in such cases, is made a part of the cuff; this large pocket is made a part of the space to be drained, and it has been the uniform result in my experience that in resorting to secondary suturing, primary union of the wound is the rule, to be attained with the same degree of certainty as suturing the wound at the time of operation.

Dr. Watkins is fearful that the intestines will insinuate themselves into the opening left in the abdominal wall and thus produce hernia, the result of intra-abdominal pressure, which is almost at a minimum with the patient in the recumbent position. But by making a peritoneal cuff as described traction is in the opposite direction; this peritoneal cuff is anchored to the broad ligament, and if traction does occur it is in the right direction for avoiding a ventral hernia. Its anchorage to the abdominal wall rather resists than favors the formation of a ventral hernia by the yielding of the abdominal wall at this point.

In answer to Dr. Henrotin I will say that the broad ligament may be expanded by the tumor to four or five times its natural length, and that there would be no difficulty in bringing the cuff to the median line.

In reference to Dr. Jaggard's question as to the catgut, this has been to me a very perplexing subject. For a long time I had the same experience as Kocher, in Berne. I had numerous instances of stitch abscesses. Kocher investigated every possible source of infection, and finally came to the conclusion that it was invariably caused by catgut and, as you are aware, he abandoned catgut, substituting for it silk, which he is using to-day. I have gone just the other way, and am using catgut more than ever since I have been able to obtain an article that I can rely upon. This has been a serious matter in the surgical clinic of Rush Medical College and in both hospitals with which I am connected, and I have only had catgut that I could absolutely rely upon since our own nurses prepared it. The catgut is chromicized according to Lister's formula and kept in a solution of 1-to-1,000 sublimate in alcohol. Since this has been done I have not seen a single instance of infection from catgut.

PELVIC MASSAGE IN GYNÆCOLOGY.

BY W. H. RUMPF, M. D.

Massage is indicated in all cases in which it is desired to help Nature improve the circulation, either by absorption of the products of exudation or by increasing the tonicity of tissues that have become inactive and congested. These pathological conditions are more liable to occur in the uterus and its appendages than in any other organs in the body; therefore, if pelvic massage can be made practicable, its use is certainly indicated. The experience of excellent gynæcolo-

gists both of this country and Europe has proved that it is practicable, and the results obtained have been very good.

The originator of the system, Thure Brandt, of Stockholm, a teacher of Swedish gymnastics, met with adverse and spiteful criticism, until Schultze of Jena at the instigation of Profanter of Vienna tested his methods by turning over to him a certain number of cases for treatment; the result of this test was published by Profanter and warmly indorsed by Schultze in 1887. Since then the disciples of Brandt have rapidly increased. The general indications for the use of massage are well stated by Dr. H. M. Vineberg in a recent paper as follows :

“Residua of inflammatory processes; cicatricial contractions; thickening and shortening of the several uterine ligaments; wide, loose adhesions cementing together the peritoneal surfaces; firm, stout cords and bands passing from organ to organ or from organ to pelvic wall; displacements and fixations of the uterus, tubes, and ovaries.” The contra-indications are pus and malignant growths.

The technique of pelvic massage is not easy to acquire and is difficult to learn from written description.

Technique of Pelvic Massage.

The patient lies with her hips resting on the end of a low couch, with the thighs and legs flexed, and the feet resting on a chair placed about a foot from the end of the couch. The operator sits at the left of the patient and introduces one or, better, two fingers of the left hand into the vagina, passing his arm under the left knee of the patient. The sole purpose of the fingers in the vagina is to raise or fix the parts to be treated. The massage is done entirely with the right hand.

The first objection commonly made to massage is that it arouses erotic sensations and may lead to masturbation. There is, however, very little irritation if the fingers are kept, as they should be, on the floor of the perinæum, away from the clitoris, and perfectly quiet.

After having introduced the fingers of the left hand, the right hand is placed on the abdomen, passing from above under the skirts, which have previously been loosened at the waist. The massage may now be commenced. Great tenderness may make this difficult, but is not a contra-indication, because tenderness alone is an indication for massage. It should consist of gentle, circular motions in the direction of the venous circulation of the organ to be manipulated. Brandt himself gives this rule : “Begin all massage gently, more in the

surrounding of the diseased part, and when the first tenderness has disappeared bear on more heavily, taking short rests in between. Stop the massage gently as you began, and finish by placing the hand flat on the abdomen or by making a few short, vibrating motions."

This procedure should be repeated daily; the time of each treatment should be about ten minutes. Menstruation is not necessarily a contra-indication; in fact the treatment will often be found most beneficial at that time for the relief of dysmenorrhœa. It may be difficult at times to exclude the contra-indications—that is, pus and malignant growths. The massage itself aids materially in making accurate diagnoses. The pain which makes it difficult to accurately outline the organs at the first examination is in itself an indication for the massage. It is astonishing how much relaxation can be obtained by the use of massage for a few minutes.

An important factor in pelvic massage is the contractility of the uterus. Arendt and other investigators have shown that any uterus, after being manipulated for some time, will contract. This is most strikingly illustrated in the puerperal uterus, but it is very frequently noticed during the massage of a non-puerperal uterus, and it is easier to map out from its surroundings a uterus that is hard than one which is soft and flabby.

Another and most valuable result which is obtained incidentally from massage treatment is the regulation of the action of the bowels. In all cases in which there is chronic constipation—and the exceptions are few—the treatment should be concluded by making the circular movements for a few minutes along the ascending, transverse, and descending colon, and the results have been very gratifying. This natural mode of regulating the bowels has a good effect in turn on the other pelvic organs by relieving the pressure from distended intestines on blood-vessels.

Of the more important pathological conditions in which massage has been found especially useful, the first is retrodeviation of the uterus with firm adhesions, thickening and infiltration of all ligaments. In such cases the object of the massage is to relieve the pain and congestion, to gradually raise the uterus from its fixed surroundings, and, finally, to keep it in position. The first of these requirements is nearly always fulfilled. The second is more difficult and the third the most difficult of accomplishment. By pulling at the adhesions every day, and by this perfectly mechanical method increasing the circulation, the regeneration of the muscular and elastic tissues of the ligaments is facilitated and at the expense of the tissue foreign to the ligaments

—namely, the fibrous tissue which has increased in consequence of inflammation. In other words, massage helps Nature to restore to the organs their normal tonicity by mechanically removing the obstacles which impede proper circulation. A factor in the treatment which assists the massage proper is the lifting of the uterus for the purpose of stretching the adhesions. Although the uterus is being constantly lifted by the inner fingers during massage, Brandt has also devised a very ingenious method of accomplishing this from the outside. This manipulation requires an assistant, who fixes the uterus, parallel with the os sacrum, between his two fingers in the vagina and his outer right hand. The operator now places his hands under the right hand of the assistant, the ulnar sides of his hands close around the uterus, grasp it and pull it upward toward the navel. After a little practice this is easily accomplished and traction will be exerted not only on the posterior but also on the anterior or vesico-uterine adhesions which frequently, by shortening the anterior vaginal wall, prevent perfect reposition of the uterus. On this procedure depends principally the successful fulfillment of the third requirement—namely, retaining the uterus in its proper place.

The second pathological condition calling for pelvic massage is chronic parametritis and perimetritis. In these conditions the ligaments are thickened by the products of inflammation. This thickened mass compresses vessels and nerves and causes a host of distressing symptoms. In these cases the massage should always be given gently at first, and may afterward be increased so that even the whole right hand or fist may be used.

The third pathological condition in which massage may be useful is chronic metritis; and the fourth, prolapse of the uterus. The successes obtained in the treatment of prolapse have apparently been obtained only by Brandt and a few others, and I believe that in this pathological condition we must first resort to other methods of treatment. In the forms of prolapse in which the pelvic floor is comparatively solid and not weakened by perineal lacerations, in which, in other words, the prolapse is due simply to a relaxation of the supporting ligaments of the uterus from subinvolution, Brandt's treatment may produce good results. In the other forms of prolapse the perinæum must first be restored.

In conclusion he says I do not consider massage a cure for all diseases of the female generative organs. It is in many cases only a helping therapeutic agent. The curette has its undisputed right in diseases of the uterine mucosa. The tampon, pessary, and douche

also have their place as valuable adjuvants. I should like to claim for massage, however, not only the right to be named in text-books as a therapeutic agent, but as an agent which deserves a place in the front rank.

DISCUSSION.

Dr. E. C. DUDLEY : I have but a word to say, and that of approval. Dr. Rumpf has treated several patients whom I have referred to him, and the success has been gratifying. In two or three cases the uterine appendages were perhaps saved from removal—that is, the indication for removal would have been sufficient in the minds of many operators. The treatment is not applicable, unless carried out for a very long period, in cases of prolapse of the uterus, when it is due to relaxation of the pelvic floor. There is a disposition among Americans to want something and to want it right away. This treatment does not meet the desire for prompt and rapid results. If the same patience could be used in the application of massage that is used by Brandt and some of the European operators, intractable cases, even of prolapse of the uterus, might be much more frequently benefited or cured. Massage is chiefly curative in long-standing, chronic inflammation of the pelvic organs, with exudates and adhesions without the presence of pus.

This treatment appears to rub out the exudates, and often to break up or stretch the adhesions. Massage is a very much neglected department of gynecology. It is disagreeable to give and is time-consuming, but the good results justify its use.

Dr. A. H. FOSTER : Massage has interested me, not because of my own practical experience, but because I have found patients who had been under treatment by eminent gynecologists for one, two, or three years, and, with the apparition of the ablation of enlarged and prolapsed ovaries hanging over them, have been recommended by other sufferers to Dr. Swissmilk, of Delavan, Wisconsin. I have in mind a case in point. I had known the patient for several years. She had been under the care of some of our most eminent Fellows for complete prolapse of the uterus following premature labor, with enlarged, tender, and prolapsed ovaries, but her case seemed to be irremediable. She was recommended to Dr. Swissmilk, of whom most of us have known for the last fifteen years. His special treatment is pelvic massage. She was under his care eight weeks and came home practically cured. In two months from the time she returned she became pregnant. I attended her in confinement. She had a normal labor and is now as healthy as the average woman.

The point made by the author of the paper that many an ovary has been saved by pelvic massage, is true in this case. This patient gave me in detail the minutiae of his treatment. She said that she was first placed upon her face on a frame couch, and her spine vigorously rubbed for a few minutes from the nape of the neck to the coccyx, then lightly tapped over the sacrum. She was then placed in the position referred to by the essayist and rubbings instituted over the uterus and deep in the inguinal region on both sides. His time of treatment was fifteen to twenty minutes each day. The patient was then turned upon her face and required to remain prone for half an hour, then directed to dress and take a walk until she began to feel fatigued, then to lie down upon her face until rested, and, finally, to walk again. He says American women do not walk enough, they need this kind of exercise, and this constitutes half his treatment. This treatment is too slow a process for the average American surgeon. Our president must have had some experience, since he is the author of a paper on massage; and one of our lamented Fellows, Dr. A. Reeves Jackson, gave a very extensive yet concise paper on massage in 1887, which may be found in the *Transactions of the American Gynecological Society*. It is interesting to observe how slowly this method of treatment advanced for many years, but since 1880 it has progressed very extensively. I believe there were at least fifteen German physicians between 1887 and 1890 who presented papers on massage. The priority of this method is rightfully claimed by Thure Brandt, because the one who brings a treatment to the general notice of the profession is practically the originator. Massage was practiced in part by a Dr. Sinclair, of Boston, as early as 1866, but he did not develop the system of treatment. In Dr. Swissmilk's treatment there is more or less of pelvic gymnastics. Some masseurs encourage, in case of prolapse of the pelvic organs, voluntary action of the levator ani and other muscles, by having the patient lie flat upon the back, cross the limbs, and raise the pelvis, and also by adducting and abducting the muscles of the thighs against opposing forces.

Dr. A. GOLDSPOHN (present by invitation): I fully agree with Dr. Rumpf that massage has not been fully developed. The paper is a faithful presentation of the principles, technique, and indications as set forth in Thure Brandt's book published in Germany in 1891, with a second edition last year. Brandt is not a physician, and has only one remedy, therefore he has to accomplish everything with massage. Physicians have many other remedies, and to them massage supplies a missing link in minor gynecological practice. It comes in as treat-

ment in a certain stage of the disease, the whole conduct of the case requiring in addition other means of treatment. My experience with massage has led me to modify Brandt's position as described by Dr. Rumpf. I have found from an experience of ten years that the left hand should be used for examination of the left side, and the right hand for the right side. This it is not possible to do with the Brandt posture. Another difficulty in giving massage is to sufficiently relax the abdominal wall. This is obtained to some extent by pressure and circular rubbing, but it may be increased by flexure of the abdomen, the pelvis and shoulders being on the same level. This may be accomplished with a good gynecological chair. I prefer to stand while giving massage. Massage is most useful in the treatment of retro-displacements of the uterus with adhesions. I have treated almost exclusively with massage no less than one hundred of these cases, and I have obtained good results.

Massage is preferable to operation in these cases, because abdominal operations can not be made without adhesions following. Sepsis is the chief cause of adhesions, but there are other causes which can not be eliminated. I know from experience that abdominal section may often be avoided by the skillful use of massage. Another important indication for massage is an adherent and prolapsed ovary. Subinvolution of the uterus can be better treated by other means than massage. An accurate diagnosis should be made before attempting to use massage. Massage should not be employed when acute inflammatory conditions exist; massage should not be given when pus or cystic tumors exist; massage should not be used when carcinoma, sarcoma, tuberculosis, or syphilis are present. I would not advise massage in patients addicted to masturbation.

Dr. G. W. REYNOLDS: I do not wish to underestimate the value of massage as a therapeutic agent, but it seems to me that this remedy will never become popular in this country, because it is disagreeable both to the patient and physician. Subinvolution of the uterus, metritis, and perimetritis with exudate, I believe, can be treated as well by other means as by massage. Metritis can be cured, if the case is not septic, by keeping the patient in bed with elevation of the pelvis, by using hot douches and by regulating the action of the bowels. Hypertrophy of the cervix with glandular disease, and prolapse of the uterus, can also be cured by amputation of the cervix. In the case of retroversion of the uterus reported by Dr. Sinclair, of Boston, as cured by massage, I notice the patient was treated in the genupectoral position. The cure by massage of a case of hæmorrhagic metritis, re-

ported from Stockholm, is ridiculous, because we know in these cases the mucosa is always infected and can only be cured by curettage and irrigation.

Dr. W. H. RUMPF, in closing the discussion, said: I have not much to add to what I have already said in my paper. I agree in the main with what Dr. Goldspohn has said, and he has mentioned many things which I omitted. I do not quite agree with him, however, as regards the position of the patient. Everything to be desired can be accomplished by using the position outlined in the paper and with a much greater degree of comfort to both patient and operator. Nor do I agree with Dr. Reynolds, who thinks that this form of treatment will not become popular because it is so disagreeable. There are no forms of gynæcological treatment very agreeable to the patient, and though this objection may retard somewhat the more general introduction of pelvic massage in gynæcological treatment, its efficiency will in the course of time gain for it its proper place.

AMERICAN PÆDIATRICS.

Some of the Causes of Therapeutic Uncertainty in Treatment in Children.

A. C. COTTON, M. D. (*Corpuscle*, December, 1894), attributes the uncertainty of therapeutic results in infant medication to forgetfulness or ignorance of the difference between the actions of drugs in infant and adult organisms. He criticises the "rules for determining dose for age," and suggests that, if we must have a standard of physiological action of drugs and a posological table, we had better adopt it for the infant and increase with years, rather than, as now, by diminishing the adult dose. The *condition* is what must determine the dosage, not the *age* and *weight*.

Another cause of uncertainty in therapeutics is the almost universal ignorance or indifference as to what the patient *actually* takes in the guise of medicine. What avails care in diagnosis and skill in prescribing, when left to the druggist, whose shelves are filled with preparations correct in name but in fact *inert* or positively harmful from adulteration, decomposition, degeneration, contamination, or which, by chemical changes and bacteriologic cultures, produce substances totally different from the active principle of the drug from which the preparation derives its name?

He then compares the precision and certainty of aseptic surgery of to-day with the uncertainties of therapeutics, and attributes these to the personal supervision of the surgeon over all the minute details of his work. He says that with the same care in the minute details of the management and treatment of medical cases, the therapeutic results will be just as certain, and that the prevailing belief that the physician can do but little to control the course of disease in children will be positively and emphatically refuted.

The time is ripe for rapid strides in pædiatric therapeutics.

Absolute certainty as to *what* is administered, *how* and *when*, based upon an accurate diagnosis, is the only road to certainty in therapeutics, even if it has to be *prepared* and personally administered.

Scleroderma.

BLOOM, I. N. (*Archives of Pædiatrics*, January, 1895), reports a case of this rare disease, the third he has seen inside of two years. The statistics of the American Dermatological Society for 1894 states that in ten thousand cases of skin disease there will be found *three* cases of scleroderma. The patient was a girl eight years of age. The disease appeared as a small white patch on the left shoulder two years ago; was now eight inches in length by an inch and a half in width, entirely painless. Had been diagnosed as psoriasis and vitiligo.

The diagnostic points are its white parchment-like appearance and feeling. Another point which he regards as absolutely pathognomonic is the *engorgement* of the *capillaries* at the edges, which are usually elevated to the thickness of one tenth of an inch.

The prognosis formerly considered *grave* is now regarded as absolutely *nil* as to life, though most intractable in point of treatment. The treatment is *empirical*, chrysarobin seeming to give the best results.

[The reporter would suggest excision and skin grafting by the "Thiersch method" with a view to the cosmetic effect in the event of other remedies failing.]

Case of Epilepsy due to Genital Irritation and cured by Circumcision.

BURCHARD, THOMAS H. (*Archives of Pædiatrics*, January, 1895), reports a case of epilepsy in a boy of twelve years clearly due to genital irritation, notwithstanding the fact that many deny the possibility of permanent influence upon the nervous system through this source. The patient complained of painful micturition at eight years. During

the next year he had frequent hysterical attacks of crying, accompanied with contractions and irregular spasms of both face and body. The next year these took the form of distinct epileptiform seizures, having tonic and clonic spasms and remaining unconscious for five minutes. The attacks occurred about once a month at first. During the six months preceding the operation, the attacks occurred every *five to seven* days and sometimes two seizures in one day. The diagnosis of epilepsy had been made by eminent neurologists both in this country and Europe and at the time he was taking large doses of the bromides.

The penis was found to be abnormally small, prepuce elongated and twisted. At the operation it was found to be entirely adherent to the glans and had to be dissected away, a mass of hardened smegma being removed from beneath. For the first two days following operation he had a slight convulsion with partial loss of consciousness, but afterward convalescence was rapid.

The patient is now twenty-eight years old and has never had a convulsion since.

A Case of Acute Spastic Œsophagitis.

ENGELMANN, ROSA (*Archives of Pædiatrics*, January, 1895), notes the unusual nervous manifestations following the prevailing epidemic of *la grippe* among children—especially those of the poorer classes.

The diagnosis is made upon marked faucial hyperæmia, twitching of the facial muscles, general nervousness and pronounced dysphagia. The head is slightly but rigidly retracted; sterno-cleido-mastoid and other postural head muscles in a state of tonic spasm; larynx and thyroid gland dislocated forward.

Scarlatinal and diphtheritic angina, post-pharyngeal abscess, together with cervical spinal caries and laryngeal affections are to be carefully excluded.

The treatment is antispasmodics and sedatives.

Infantile Myxœdema.

NORTHROP, WILLIAM P. (*Archives of Pædiatrics*, November, 1894), discusses myxœdema as illustrated by two cases systematically observed and treated in hospital.

CASE I.—Female, nine years old; parents not consanguineous; labor normal, not tedious; no instruments; up to nine months of life considered a perfect child; nothing of interest in history of parents;

mother has two healthy children. At nine months this patient ceased normal development, and at nine years is mentally no older while physically it merely thickened. When the child was nine months old the mother thought that it did not sit up as her other children had done, and sought advice for the supposed weakness of the spine. She has sought aid from many sources, but has long since given up in despair. The patient looks like an idiot. Its head is large. Its color is peculiarly tallow-like. The hair is thin and poorly nourished; has no luster. This cretin has the characteristic flattening of the bridge of the nose, a tilting back, the nostrils facing forward. It has diffuse swelling under lids, puffiness of upper eyelids, pendulous cheeks, thick, anæmic lips. The tongue is swollen and protruding. Has fourteen first teeth. Gums are eroded, suppurating, and filthy. The arms and legs are thick, the feet and hands stumpy; belly prominent and embossed with usual umbilical hernia. The skin, while never sweating, was soft and not abnormal except upon the hands and feet, where it had a parchment-like wrinkling. Patient had no hard or firm œdema.

The "supra-clavicular pad" is soft and flabby. The thyroid gland is present and seems a little enlarged.

Treatment.—At hospital her temperature was found to range from 99.5° to 100° daily; respiration 16 to 20; pulse 80 to 88; obstinately constipated; gums habitually ulcerated and foul.

Plan of treatment was to administer a reliable form of sheep's thyroid gland, regulating the amount by the range of the temperature. Cray's formula was used. The directions were to begin with one minim three times a day, increasing the dose one minim every second day until the temperature rose and try to keep the latter at a point just below 100° F. On the fourth day the temperature overstepped the limit and the thyroid was stopped for a while.

After eight days of treatment the child was improved in these respects: Tongue markedly smaller, countenance brighter, taking more food and greater variety. Cut two teeth (canines). Good natured and much brighter the mother thinks. Bowels are regular.

CASE II.—Male, twelve years old; German descent. In hospital seventy-six days; improved. Family history not known. Patient is short and stumpy, head large, long antero-posteriorly, flattened at bridge of nose, nasal openings pointed forward, limbs short and thick, abdomen prominent. Looks fairly intelligent, eyes bright. When suddenly asked his name he would seem to be mentally rummaging to find it. He would shape his lips, take a long breath, and

yet the answer was delayed. When it finally came it was a thick half-nasal mumble. He seemed to be good-natured and happy.

Treatment.—Thyroid extract (Crary's), one minim three times a day, and increased by one minim until the temperature reached 100° . The progress of the boy was favorable in these respects. He seemed mentally brighter, was a little more active, and grew in height 1.5 cm.

Three Cases of Acute Pyelitis in Infancy.

HOLT, L. EMMETT (*Archives of Pædiatrics*, November, 1894).—Acute pyelitis has been given but small space in pædiatric literature. Most writers make the statement in a general way that acute pyelitis may accompany any of the infectious diseases, the eruptive fevers, diphtheria, and malaria, but few clinical observations have been recorded.

CASE I.—Male infant fourteen months old. With the exception of slight diarrhœa had never been sick. Child suddenly became ill, and temperature was found to be 103.5° . Physical examination revealed nothing. Quinine was given, ten grains daily, but with no benefit. An unexplained fever continued for a week with the temperature ranging between 100° and 102° . Urine examined on the seventh day and pus found in large amount. The constitutional symptoms were only moderately severe. No evidence of kidney complication and case made a prompt recovery. There was nothing to suggest a local cause, such as traumatism or calculus, balanitis or urethritis.

CASE II.—Female infant eight months old. While apparently in perfect health it was taken suddenly with a chill followed by a very high temperature. For twelve days the temperature was steadily high, touching 105° almost every day and only temporarily reduced by baths. Early administration of ten grains of quinine daily had no effect upon the symptoms. There was no evidence of local disease until the urine was examined on the eleventh day and found to contain a large amount of pus. With the administration of alkaline diuretics, and a great increase in the amount of urine and the discharge of pus, the temperature gradually fell, and after four days remained at the normal point. There was no suspicion of malaria, there was no evidence of vaginitis or cystitis. The occasional casts and renal epithelium indicated that the kidney participated in the inflammatory process in a slight degree, as the rapid recovery showed. The child presented no marked prostration in spite of the prolonged high temperature.

CASE III.—Female child nine months old. Had been perfectly well until ten days before the present illness, when she had a mild attack of influenza. Child was taken suddenly with a severe chill. Under appropriate treatment reaction was established and temperature reached 104° . In a few hours all symptoms disappeared. Twelve hours later a second chill occurred similar to the first; this also disappeared in a few hours and left the patient apparently well.

On the third day two severe chills occurred, the temperature rising immediately after in one case to 105° and in the other to 104.5° . In three or four hours a fall occurred accompanied by a profuse perspiration. On the fourth day a specimen of urine was examined, and after standing a deposit of pus was found equal to about one fifth of the entire volume of urine. Citrate of potassium was then given in large quantities. The amount of urine was increased but still contained a large amount of pus. Quinine was then given freely hypodermically. Previous to this the temperature ranged from 98.5° to 106° . From the time the quinine was begun the wide fluctuations ceased and there were no more chills, but in other respects patient seemed about the same for three weeks, when she began to improve. In three months she was declared well.

The exact ætiology of this case is difficult of explanation. The effect of the quinine admits of two explanations. The first that there was a malarial element in the case, and second that the drug, eliminated in such a large amount by the kidney, had a marked antiseptic effect in the urinary tract. The latter seems more probable. In none of the cases reported was there any evidence of a local cause of the disease either of traumatism or of calculus. In none were there any previous or subsequent symptoms pointing to disease of the kidney. In no case was there evidence of disease of the lower part of the urinary tract. The author calls attention to the necessity of the examination of the urine in infancy in all acute diseases with doubtful symptoms.

The Feeding of Children. (Medical Record.)

A thin sandwich of stale bread with scraped beef and a glass of milk is a good breakfast for a babe of two or three years of age. A dish of plain meat soup with baked potatoes, a boiled vegetable and bread will be his dinner at noon. By three o'clock he will want crackers and milk. At six o'clock a cup of custard or bread and butter with milk should be the last meal of the day. Physiologists say that children absorb three or four times as much carbon per pound weight as

adults. This accounts for their eating so out of proportion to their weight as compared to their parents.

At two years of age or thereabout the child has his twenty deciduous teeth. He can eat all plain food of a proper table and thinks he should have everything he sees. All fried food is difficult to digest. Recooked meats are improper. All so-called rich food is interdicted as the system is not strong enough to wrestle with foreign substances or excess of natural diet.

During the second year fruit is admissible. Scraped sweet apples are enjoyed, and digested in one hour and a half. Baked apples in milk with crackers make a good supper. Juice of oranges is good in the morning.

Stimulants.—The testimony of physicians is almost unanimous against alcohol, for children in health. The small percentage of sugar or oxidizable material in wines and beer is more than offset by injuries to digestion and the nervous system. All the wisest men use stimulants guardedly, even in infantile disease. Tea and coffee have a very considerable value in checking tissue waste and indirectly supplying nitrogenous matter and salts but these virtues are entirely counterbalanced by the ill effects of tannin and theine—the one causing colic, etc., the other making the child nervous, fretful and peevish. Still the children of the poor consume great quantities of both.

In arranging a dietary regard must be had for season, cold or hot climate, sluggish or active temperament of the child, etc. The exact weight or exact age of the child is not a proper criterion. Two atoms of hydrogen unite with one of oxygen to form a molecule of water, but you can not be sure that a given number of grains of nitrogen will produce a definite number of foot pounds of force or that so much sugar will produce so many heat-units.

It is often forgotten that the child needs a large amount of water even if his diet be chiefly fluid.

At the sixth or seventh year, when the deciduous teeth fall, the child must be urged to chew his food thoroughly. If he begins to attend school that will form an excuse for bolting meals. Still later at puberty unusually rich or highly spiced food should be avoided lest it increase sexual excitement in the immature.

Bring up the child from the beginning to eat slowly and at regular times as much as he wants. The rules of time and quantity will be on a sliding scale in different families. In feeding infants as in the whole practice of medicine, we must fix the principles and prescribe with common sense according to the case in hand.

THE STATUS OF GYNÆCOLOGY ABROAD.

BY HIRAM N. VINEBERG, M. D.

The Question of Nephrectomy in Vagino-ureteral and Utero-ureteral Fistulæ.

A. MACKENRODT (*Berl. klin. Woch.*, 1894, No. 51) describes another case of utero-ureteral fistula which he cured by a plastic operation. He first converted the uterine into a vagino-ureteral fistula by extirpating the uterus and stitching the end of the ureter into the vagina. The vagino-ureteral fistula thus made was then operated on in the same way as his two former cases of vagino-ureteral fistulæ, a full description of which is to be found in the *Zeitschrift für Gynäk.*, Bd. xxx. The operation consists in dissecting out a piece of the vaginal wall embracing the fistulous opening of the ureter, making an opening into the bladder and stitching the portion of the vaginal wall with the fistula into the incision made in the bladder so that the ureter opens into its interior. [In order to comprehend the steps of the operation which is very ingenious we must refer to the original articles.]

Intra-uterine Treatment. Curettage.

R. OLSHAUSEN (*Berlin. klin. Woch.*, 1894, No. 50) sounds a note of warning as to the dangers that may attend intra-uterine treatment. Sounding the uterus often leads to sepsis. Injections of medicated fluids do not often lead to sepsis but frequently give rise to disagreeable and severe uterine colic. They may also produce symptoms of peritonitis. Gradual dilatation of the uterus may be accomplished either by laminaria tents or by iodoform gauze. Sponge tents are to be avoided. During the past seven years he has met with four cases of sepsis following dilatation with iodoform gauze. Two ended fatally and the third was rescued only by extirpating the uterus. Similar cases are not infrequent but are not reported. He recognizes only two indications for the use of the curette:

- (1) For diagnostic purposes in cases of suspected malignancy.
- (2) In fungoid or hyperplastic endometritis.

In ordinary catarrhal conditions gonorrhœal or otherwise the curette not only can do no good but may do harm. For endocervicitis it is more than useless.

He looks upon the curette as an instrument which should be em-

ployed only by a skilled and trained hand and hence gynæcologists only should perform curettage. The dangers of perforating the uterus in curetting is fully emphasized. He uses a small instrument, does not precede the operation with a dilatation and deprecates fixing the cervix with a volsella which he thinks enhances the danger of perforation.

[American gynæcologists will scarcely share the distinguished author's views of the dangers of the curette, but it might be well for woman-kind if the profession in general were a little more circumspect in the use of the instrument. We know many instances in which the practitioner claimed no knowledge or skill in diagnosis of pelvic affections but would unhesitatingly perform a curettage. We think this very wrong. No man has a right to do a curettage without possessing skill in the palpation of the pelvic organs.]

The Rôle the Bacterium Coli plays in the Causation of Eclampsia.

Dr. SÉCHEYRON (*ibid.*), says it is generally agreed that eclampsia is an infectious disease either one of auto- or hetero-infection. The weight of evidence however is in favor of its being an auto-infection. In thirty-one cases examined by Pilliet and Bouffu du Saint-Blas, there were no kidney lesions but characteristic lesions of the liver consisting of numerous hæmorrhagic lesions. Drs. Oui and Sabrozes drew the attention of the profession to an important source of auto-infection—the *Bacterium coli*.

A case of eclampsia is reported in full which the author thinks confirms the theory of auto-infection from the *Bacterium coli* as the woman suffered from long-continued constipation. In addition to chloral and inhalation of chloroform, lavage of the intestines was carried out several times, removing an abundance of fæcal matter. Some originality is claimed for the latter procedure as the author says it was the first time ever employed.

[Seeing that neither the mother nor child were saved, the treatment thus far has not much to recommend it. Further, inasmuch as the urine contained a high percentage of albumin the case does not strengthen the theory of auto-infection from the *Bacterium coli*. If constipation and consequent infection from the *Bacterium coli* could cause eclampsia this affection would be much more common than it is.]

Traumatic Rupture of the Uterus.

Dr. ARMIN TREU (*St. Petersburger med. Woch.*, 1894, No. 47) reports a case of rupture of the uterus but the history does not clearly

indicate the nature of the traumatism that caused the injury. Treu delivered the woman by performing version. She recovered after a ten weeks' illness in bed.

Vaginal Hysterectomy in Cases of Ventro-fixation.

JACOBS (*Policlinique*, 1893, No. 24) did a vaginal hysterectomy for bilateral disease of the annexa in a woman who had previously had performed upon her an amputation of the cervix, a ventro-fixation and a néphropexie. The operation was tedious and difficult owing to a pedicle six centimetres long which bound the uterus to the abdominal wall. The pedicle was left behind and the patient developed symptoms of ileus eight days afterward. Cœliotomy was then done and the pedicle which had formed adhesions with the intestines was removed but the patient died on the next day.

In a second case in which ventro-fixation had been done five months before with buried sutures, Jacobs began with the vaginal hysterectomy, then opened the abdomen, freed the uterus from its adhesions, closed the abdominal wound and then completed the vaginal operation. The patient made a good recovery.

Perinæorrhaphy for Complete Laceration of the Perinæum During Pregnancy.

Dr. LITTAUER (*Cent. für Gyn.*, 1894, No. 35) relates a case in which the condition due to a complete laceration of the perinæum involving the rectum became so unbearable to the woman that an operation became urgent in spite of the presence of pregnancy. The operation was successful and the woman went on to full term. Owing to uterine inertia and a large head the forceps had to be applied. The newly formed perinæum was saved by making an incision to one side into the perinæum and vagina. The wound thus made was sewn and healed by primary intention.

Intra-uterine Injections of Euphoria in the Treatment of Endometritis.

PINNA PINTOR (*Annali di obst. e. Gin.*, 1893, No. 8) warmly praises the anti-bactericidal action of euphoria, which he used chiefly intra-uterine for the treatment of endometritis. The author uses a saturated alcoholic solution which he mixes with equal parts of sterilized olive oil. The injections are repeated every four to six days, the uterus being first irrigated with sterilized water. The remedy possesses also a hæmostatic effect which the author thinks is chiefly to be ascribed to the alcohol.

Vaginal Hysterorrhaphy.

M. JACOBS (*Bull. de la soc. Belge de gyn. et d'obst.*, 1894, No. 6) asks why hysterorrhaphy by the abdominal method with its numerous risks and subsequent ill after-effects should ever be done when the vaginal method offers the same advantages but none of the disadvantages of the abdominal. He tabulates 20 cases of vaginal fixation in which he had 19 cures, 15 of which still remain cured, 4 became pregnant and 3 went on to full term. One of the cases presented a unique history. She was operated on in January, 1893, became pregnant in November of the same year. In January, 1894, he found a cyst of the left ovary. He opened Douglas' *cul-de-sac*, punctured the cyst, drew out its walls, applied a compression forceps to the pedicle which was removed in 48 hours. The pregnancy went on undisturbed and the woman had a normal delivery. In all of the 3 cases going on to full term the uterus was in good anteversion afterward. He employs the transverse incision and uses buried sutures. In one instance the operation was abandoned, because a hole was punched into the bladder with the finger in pushing it away from the uterus. He resorts to abdominal fixation only in cases of very firm adhesions and in the presence of unilateral disease of the annexa. In bilateral disease he does a complete extirpation of the uterus and annexa.

[Until recently the reporter put the same limitations upon the indication of the operation as stated in the foregoing paper. Latterly however in suspected disease of the annexa he enters the peritoneal cavity, delivers the annexa through the vaginal incision and treats them upon conservative surgical principles. If they are hopelessly diseased they are ligated and ablated as per abdomen. In a recent case both annexa were removed in this way, the patient leaving the hospital 14 days after the operation. The uterus was not removed because the operator has not as yet been able to convince himself of the soundness of the doctrine to remove an apparently healthy organ because it is no longer of any use. He freely grants that in some cases of bilateral disease of the annexa the uterus should also be extirpated, and he has done this in a few cases, but the ground of its removal must rest upon a firmer scientific basis than its further uselessness and the false reasoning that it must be proportionately diseased with the annexa.]

The After Results of Symphysiotomy.

Dr. HANS V. WOERZ (*Centl. für Gyn.*, 1895, No. 36) has followed up the cases operated on in Schauta's Klinik by suturing the bones

together. Of the ten cases one died of sepsis, and two could not be found. The remaining seven cases were subjected to various tests to ascertain the firmness of the osseous union. The patient was first made to walk slow then fast next in the horizontal position the finger was introduced into the vagina and held in contact with the lower surface of the symphysis and a number of movements with the thighs carried out. All of the seven women walked naturally and were enabled to attend to their duties. They felt as well as they had before the delivery, had no pain on walking, running or climbing stairs. The examinations of the pelvis showed an excellent result, a strong cartilaginous symphysis could be felt. In no case was a flaring of the bones or a non-apposition of their ends made out. Incontinence of the urine due to irritation of the silver wire was not present in a single instance. He sums up the results of his investigations as follows :

(1) In all of the five cases in which the bone suturing had succeeded there was without an exception a rapid, complete and permanent union of the ends of the symphysis. The woman already on leaving the bed had the full power of locomotion and at this time an examination showed a firm union of the symphysis cartilage—conditions which were found unchanged a year later.

(2) In the four cases in which for various reasons the bone suturing was not so successful there was a difference between the early and late results. At the time of leaving the hospital there could be made out a greater or less degree of diastasis between the ends of the symphysis which however became corrected by wearing a firm bandage. In one case the locomotion was interfered with for months afterward. In the two cases examined later a firm union of the bones was found and the fate of the two others could not be ascertained.

(3) In cases not treated by bone suturing a *restitutio ad integrum* may certainly take place but it is questionable if the union would be found firm a year later.

(4) The injury of the soft parts in cases of symphysiotomy in Schauta's Klinik was not followed by any untoward sequelæ.

The Permanent Results of Symphysiotomy.

RICHARD BRAUN V. FERNWALD (*Centl. für Gyn.*, 1894, No. 37) reports twelve cases of symphysiotomy, four of which ended fatally. He emphasizes his former attitude that the operation is contra-indicated in the presence of sepsis. The cases are divided into two groups :

- (1) Cases of bone suturing.
- (2) Cases of periosteal suturing.

The after-results in the cases of periosteal suturing with silk were all that could be desired and, the author feels satisfied with that method of treatment.

OBSTETRICS.

By J. D. BISSELL, M. D.

Pregnancy in a Rudimentary Uterus.

REMFREY, LEONARD (*Univ. Med. Jour.*, December, 1894) exhibited before the London Obstetrical Society, Oct. 4, 1894, a specimen of pregnancy in a rudimentary uterus. The patient had presented no symptoms of pregnancy and for one year was treated for fibroid. The tumor diminished in size but the patient's condition did not improve. An operation was then performed and the tumor was found to be joined by a narrow pedicle and was removed without difficulty. The specimen contained a macerated skeleton, but there could be traced no connection between its cavity and the uterus.

Fatal Case of Vomiting in Pregnancy.

NOLEN, WILLIAM L. (*Atlanta Med. and Surg. Jour.*, November, 1894), reports a case which occurred in the practice of an ignorant physician in an adjoining State. Vomiting had been very troublesome throughout the entire pregnancy. What means were used to allay it could not be ascertained. At the end of the third month nothing could be retained on the stomach, and emaciation soon began. Epithelium from the stomach was vomited in great quantities. Exhaustive diarrhœa began at the end of the sixth month, and continued with the vomiting until the end of the eighth month. At the end of eight and a half months labor came on itself; the child was born alive but lived only a few hours. The mother sank into a stupor and soon died.

Two Pregnancies in a Patient with a Large Fibroid.

REMY (*Arch. de toc. et de gyn.*, October, 1894) reports two cases of pregnancy occurring in a woman with a large fibroid tumor. The first occurred April 29, 1881. The two tumors which filled the abdo-

men at the time of labor were almost of the same size; the left, in which could be felt a fœtus, measured ten and a half inches vertically. During labor pains both tumors could be felt contracting, the left most distinctly, however; and fœtal heart sounds were easily recognized. Heart sounds ceased when head was deeply engaged, and forceps were applied. A dead fœtus was extracted weighing seven pounds eleven ounces. The patient again became pregnant and was delivered Dec. 12, 1883, of a living child. Her recovery, as previous, was uninterrupted.

Laceration of Recto-vaginal Sæptum in Labor; Perinæum Intact.

BAUDRY (*Annales de gynéc. et d'obstét.*, July, 1894) reports a case where the hand of the child was seen to suddenly project through the anus of the mother while the head was down against the vulva. When the head was delivered, the hand was easily disengaged from the wound which it had made. The vulva and perinæum were intact. In the posterior vaginal wall there was a large triangular rent which was sutured but did not completely close until the end of four months. Patient's previous history showed that ten months before pregnancy an abscess formed in the recto-vaginal sæptum and had burst spontaneously.

A Case of Advanced Extra-uterine Gestation, in which a Living Child was removed, the Placenta left, and the Abdominal Wound entirely closed.

CULLINGWORTH, CHARLES J. (*British Med. Jour.*, December 22, 1894), reports a case which he at first regarded as a normal intra-uterine pregnancy; but at the end of eight months when paroxysmal pains set in, an examination of the cavity of the uterus showed that organ to be empty, and an operation for extra-uterine pregnancy was immediately done. The fœtus was found lying in the peritoneal cavity enveloped in its membranes. It was removed alive and lived over seven months. At birth it measured nineteen inches in length and weighed five pounds. It was perfectly formed. During the operation most of the membranes were cut away, the umbilical cord was ligated and cut off short. The amniotic cavity and the peritonæum were sponged dry and the abdominal wound closed. Patient showed no signs of shock during operation. Sutures were removed on the eleventh day and for over three weeks progress was satisfactory. On the twenty-fourth day there occurred a rigor lasting ten minutes; later in the day temperature rose to 103.4° and then to 104.2°, pulse-rate 138. The temperature fell on the next day but patient was very rest-

less and complained of abdominal pain. On the twenty-sixth day the abdomen was opened through the old incision. The placenta presented in the wound, and a considerable quantity of purulent fluid escaped. The right broad ligament was transfixed and tied, and the placenta was cut away from its attachments. The edges of the wound were sutured into apposition and a drainage-tube inserted. Patient died half an hour after operation. Dr. Cullingworth attributed the death to shock acting on a dangerously debilitated patient, and considered that the result was "so far accidental as to afford no solid reason for rejecting this plan of treatment." He reports the case as being the first instance of extra-uterine pregnancy, with a living child, in which the method of closing entirely the abdominal wound and leaving the placenta *in situ* was carried out.

Principles of Axis Traction.

JEWETT, CHARLES (*Brooklyn Med. Journal*, January, 1895), read a paper on this subject before the Brooklyn Gynæcological Society. He first stated that while Pajot's manœuvre or a similar one overcame in a great measure the defect in the ordinary forceps, yet the exact adjustment of the two forces which it necessitated was impracticable. He considered it a valuable manipulation but only a rude approximation to axis traction. The aim of the properly constructed axis-traction forceps is to accomplish delivery with the least possible expenditure of force. In order for this to be done, traction must be made absolutely in the line of descent from the beginning to the end of delivery, and the line in which to pull must be made known at every point of descent by a reliable index. The instrument must allow pulling exactly in this line. Once the blades are properly applied traction should not disturb at any point in the descent the parallelism between the axis of the blades and that region of the canal in which they lie. The handles of the instrument will serve as a constant index to the direction in which the head is moving, and consequently a constant guide to the line of traction. In order for this to be accomplished perfectly, the traction rods should be attached to the blades by a movable joint and the traction bar to the rods by a universal joint. During the operation the principal point is to keep the traction rods parallel with the handles of the forceps.

The location of the stud from which the traction rods pull is most important. Theoretically it should be the center of the blades, but since that would fall within the fenestra, a point must be selected just below it. According to Dr. Milne Murray of Edinburgh, this point

should fall within a line which is tangent to an arc of a circle described upon a perpendicular line bisecting a line drawn between the center of the tip of the blade and the point on the forceps blade where the pelvic curve begins.

In many axis-traction forceps, including even Tarnier's, the location of the stud is not at the vantage point.

The model of the instrument Dr. Jewett presented was based upon Murray's projection; the pelvic and cranial curve of the Tarnier instrument, and the fixation screw were preserved, but the half Smellie was substituted for the button lock. The attachment of the traction bar to the rods is so arranged as to permit less mobility at that point than in most other instruments.

Some Considerations on the Course to pursue in Pregnant Women who are "In Extremis."

S. REMY (*Archiv. de tocologie et de gyn.*, November, 1894) is in favor of doing an *accouchement forcé* in cases of pregnancy in a moribund condition rather than an ante- or post-mortem Cæsarean section. He prefers this for sentimental reasons and thinks also the chances of the child are increased thereby. In one of two cases he reports a living child was obtained, in the other version was done but the child was macerated, there was arrest of the after-coming head and craniotomy had to be done.

Sixth Report of Labors without Internal Disinfection.

A. MERRMAN (*Cent. für Gyn.*, 1894, No. 33) reports three hundred further cases of labor in the Mannheimer Maternity without a death and without internal disinfection. Among these there were several operative cases. This made in all one thousand two hundred cases in the Maternity without a death in which the same line of treatment has been carried out. The percentage of morbidity, or in other words the cases in which the temperature no matter from what cause registered above the normal was six to seven per cent.

The twenty cases of fever of the last three hundred cases is ætiologically subdivided as follows:

Extra-genital causes, nine.

Ptomaine infection, two.

Defective subjective antisepsis—

(a) In the Maternity seven cases.

(b) Outside the Maternity two cases.

CONGENITAL ANNULAR STENOSIS OF THE VAGINA— AN IMPROVED METHOD OF OPERATING.*

By H. N. VINEBERG, M. D.

Acquired stenoses and atresias of the vagina are fairly common and have received considerable attention in literature; but not so the congenital stenoses of the vagina. The literature on the subject is very meager. This, doubtless, is due, in part, to the looseness with which many authors employ the terms "atresia" and "stenosis." For instance, several authors speak of "incomplete atresia"—a solecism which should not occur in scientific medicine. Either an atresia (ἀτρησία, from ἀ, priv., and ἄ τρησίς, a perforation) is complete or it does not exist at all. If there be an opening or a perforation, no matter how small, it is no longer a condition of atresia but of stenosis or stricture.

The meagerness of the literature on the subject of congenital stenosis may be judged from the circumstance that, in 1890, L. Kleinwächter† was able to collect only twenty published cases, and in only two of these was the annular stricture situated at the junction of the middle with the upper third of the vagina. In his paper he reports two cases in which the stricture was situated in this portion of the vagina. Ostermann and Odebrecht‡ have each recently reported a similar case. A search through literature since 1890 has failed to find any other cases. These six cases, then, form the total number hitherto published. The two cases that I am about to report will bring the number up to eight. I am loath to believe, however, that the condition is as rare as these figures would indicate. Many cases, no doubt, go unobserved. They are frequently overlooked because they may give rise to no symptoms. When the conditions interfere with marital intercourse, as in one of my cases, the woman may have her attention drawn to it and seek advice. In other instances it is found accidentally, as in my first case, when the physician makes a vaginal examination for some uterine disorder having no reference to the anomaly. In another class of cases the woman may seek advice

* Read before the Section on Obstetrics and Gynæcology of the New York Academy of Medicine, May 24, 1894.

† *Prag. med. Woch.*, 1890, pp. 589-591.

‡ *Centrlbl. für Gyn.*, 1894, No. 5, p. 123.

on account of sterility (Kleinwächter).* In a further class of cases the condition is found at labor—Doleris,† Murphy,‡ Hemmer,§ G. Braun,|| Heyder.△ But in the latter class of cases I am of the opinion that it is frequently overlooked. For unless the accoucheur made a very careful examination he would be likely to mistake the thick ring for an undilated os. As these rings often yield to the intermittent pressure of the head and the softening processes attending labor, the true condition would not be revealed.

CASE I.—A. A., single, aged seventeen, was seen in consultation with my friend Dr. J. I. Metzger, March 19, 1893. Has had none of the diseases of childhood. At five years she had a vaginal discharge, which seemed so unnatural to her parents that they consulted a doctor about it. He made light of the matter, and it disappeared after a time. In her seventh year she had a similar discharge, and again in her twelfth year. Since then the discharge has continued about the same. In her thirteenth year she had typhoid fever, complicated by pneumonia, but made a good recovery. Apart from this she enjoyed good health until six months ago. Menstruation set in when she was fourteen years of age, and was regular and painless from the outset. For the past six months has been complaining of pain in both groins, backache, and increased vaginal discharge. Exercise, particularly walking, made the pain in the groin worse. These pains were relieved during menstruation, which continued to be regular. Health otherwise fairly good.

She is a tall, slightly built girl, with small, undeveloped mammæ. The external genitals are normal, though rather undeveloped, the pubes is thinly covered with hair. The hymen is ruptured from previous examination. The examining finger comes into contact with a membranous ring at about the upper two thirds of the vagina. In the center of this ring is an opening barely admitting the point of the index-finger. The ring seems to be about one centimetre in thickness, and is smooth and homogeneous in structure, revealing no evidences of cicatricial tissue. With the finger in the rectum the cervix of a rather small retro-displaced uterus is felt about one inch above the stenosed part. The left ovary and tube are normal in size.

* *Loc. cit.*

† *Archives de tologie*, 1886, No. 2, p. 135.

‡ Meissner: *Frauenzimmer Krankheiten*, Bd. i, p. 327.

§ *Neue Zeitschrift für Geburtskunde*, Bd. iv, p. 3.

|| *Centrlbl. für Gyn.*, 1889, No. 7.

△ *Archiv. für Gyn.*, 1889, Bd. xxxvi, p. 502.

From the right horn of the uterus a moderately thick cord can be felt passing to the right sacro-iliac articulation. The right ovary can be made out of normal size, but the right tube can not be palpated.

Diagnosis.—Annular stenosis of the vagina, probably of congenital origin, retro-displacement of the uterus.

On June 15, 1893, I assisted Dr. Metzger to do the customary operation of crucial incision and forcible stretching. At the operation it was found that the vagina was quite roomy beyond the stenosis. The wound was packed with iodoform gauze and afterward kept dilated by Sims' glass plug. This part of the treatment was rather unsatisfactory, and the stricture was not very much improved by the operation.

CASE II.—B. G., aged twenty-two, was first seen by me in January, this year, in my service at the Mount Sinai Dispensary. She was married four months, and sought advice because coition was painful to her and unsatisfactory to the husband. He stated that he could enter only for a short distance, and then "something" seemed in the way. Her history was negative. She had always been healthy as a girl, and never had any vaginal discharge. Had none of the diseases of childhood, as well as she could remember. She is a well-built, fully developed woman, mammæ and external genitals normal. At the junction of the middle with the upper third of the vagina a constriction is felt, formed by a membranous ring, in the center of which is an opening just large enough to admit the point of the index-finger. With the finger in the rectum a normal-sized uterus is felt, in anteversion, lying some distance above the constriction.

On January 22d, assisted by Drs. Rau and Brothers, I excised the ring with scissors, flush with the vagina, for about three quarters of its circumference, taking care not to injure the rectum. I then stitched the upper and lower edges of the vaginal mucous membrane by a continuous catgut suture. Beyond the first ring the vagina was funnel-shaped, and at about the level of the cervix was a second ring, of larger caliber than the first, admitting the points of two fingers. The portio was very small and short, and the anterior lip seemed to be continuous with the second ring. I made one attempt to dilate this ring, but did not persevere in my efforts as there seemed no special indication for its removal. I was desirous to dilate and curette the cervix, as there was some cervical catarrh, but experienced some difficulty in seizing the small cervix with the volsellum. With the aid and suggestion of Dr. Rau the cervix was drawn down by catching hold of the second ring with the volsellum and making trac-

tion on it. A dilatation and curettage were then easily done. The vagina was packed lightly with iodoform gauze, which was removed in forty-eight hours. The patient was kept in bed for a week. At the end of that time the vaginal wound had healed by primary union. The vagina was now quite capacious, and the two examining fingers encountered only a small portion of the ring, which had not been excised. This now is fully obliterated. Coition ever since the operation has been satisfactory and unattended with pain to the woman.

The origin of individual cases of malformation of the vagina is always a matter of more or less doubt. It is not always easy to tell whether the pathological condition is congenital or acquired. During severe attacks of scarlatina, measles, and typhoid fever there may be an ulcerative inflammation of the vagina going on without being observed by the attendant physician. The local affection is entirely masked by the more severe and greater disease. As a result of the ulcerative process a ring-like stenosis may form, which may be smooth and homogeneous, having all the characteristics of a congenital formation. It may be well to remember, however, that in children it is usually the vulva and the region external to the introitus that are affected with inflammatory diphtheritis and ulcerative processes.* This view of the mode of origin of membranous stenosis of the vagina is based chiefly on what has been found to follow ulcerative processes in the vagina following labor. Some cases in multipara have been reported (Olshausen and Odebrecht†) in which an annular constriction was found in the vagina, apparently showing no traces of cicatrization, and which, were it not for the prior history, might have been looked upon as of congenital origin.

Bearing all this in mind, and recognizing the difficulty in deciding in a given case whether it is congenital or acquired, I think it may be safely assumed that both of the cases reported to-night were congenital. In Case I some doubt might arise, from the existence of a vaginal discharge at the age of five and seven years respectively. But this discharge was evidently no more severe than is frequently witnessed in young girls, and probably would not have excited the attention of the parents had it not been for its appearance at what appeared to them an unnatural age. A condition severe enough to be attended with an ulcerative process would not have been treated lightly by the doctor that had been consulted. In Case II there seems to be no

* Henoch: *Kinderkrankheiten*, Auf. iv, Berlin, 1889.

† *Centrbl. für Gyn.*, 1894, No. 5.

room for reasonable doubt. The patient had always been healthy as a girl, had had no severe illness, and had had no vaginal discharge. Still, the existence of a second ring, and a very small, poorly developed cervix would speak in favor of an ulcerative process. But this may have been, and no doubt was, of intra-uterine origin. In fact, Breisky* and others maintain that the cause of congenital vaginal stenosis is to be sought in foetal inflammatory processes, and that they probably most often occur during the later period of intra-uterine development. On the other hand, some other observers, notably Dohrn,† hold that they develop in the same way as the hymen. A third theory is that they are due to anomalous development of Müller's ducts. Olshausen‡ claims that it is difficult to explain the origin of vaginal stenosis on the theory of an anomaly of development, and for this reason alone doubts their congenital origin.

The diagnosis offers but very little difficulty. The examining finger comes against a ring-like constriction in the upper part of the vagina, with an opening varying in size from a few millimetres in diameter to that which will admit the point of one or two fingers. An examination *per rectum* will reveal the cervix lying two or three centimetres above the constriction.

An apparent stenosis is not infrequently observed in pregnant women. It is situated in the upper part of the vagina, not far below the vault, and though the constriction may be considerable, it never offers an obstruction to labor. E. Martin already had called attention to it, and stated it was a constant occurrence in primiparæ at the sixth month of gestation (A. Martin,* Olshausen||). It is said to be produced by a pressing down of the vaginal vault, forming a duplication of the vaginal wall.

The treatment usually adopted consists in forcibly rupturing the membranous ring, or making a crucial incision and stitching the torn or incised membrane together in the direction of the long axis of the vagina. The crucial incision was the method followed in the first case, and seemed to me unsatisfactory in that it required considerable after-treatment with vaginal plugs to prevent recontraction and the immediate result was far from gratifying. It occurred to me in the second case that it would be better to excise the ring and stitch

* *Cyclopaedia of Obstetrics and Gynecology*, vol. x, p. 255. William Wood & Co.

† *Über die Entwicklung des Hymen*, *Schriften der Gesell. für Beförderung der gesam. Naturwissen. zu Marburg*, Bd. x.

‡ *Loc. cit.*

* *Centrlbl. für Gyn.*, 1894, No. 5, p. 125.

|| *Ibid.*, p. 124

the upper and lower edges of the mucous membrane together, which I did. No after-dilatation was necessary, and the result was perfect. Union had taken place by primary intention. There was no constriction to be felt at the old site of the stenosis excepting a small portion of the ring that had been left on the anterior wall. In a similar case I would excise the whole ring, though now in my case scarcely a trace of any constriction can be detected. In fact any one examining the patient now for the first time would find some difficulty in locating the site of the former stenosis. The late C. C. Lee, in his excellent article on Vaginal Atresias, in the *American System of Gynæcology*,* and, by the way, he also employs the paradoxical term "incomplete atresia," speaks of dissecting out the atresic bands. He followed this method in one case, but left the denuded surface to heal by granulation. "The process was slow, from the necessity of constantly maintaining effective dilatation, but by degrees it resulted in obtaining a perfectly formed vagina." In my search of the literature on the subject I find that Heyder,† in 1890, pursued very nearly the same course that I did. He divided the membranous ring into two by a Paquelin cautery, excised each half with the scissors, and brought the mucous membrane together by fine silk. Healing occurred in eight days. There was only a slight constriction to be felt afterward.

In cases where the stenosis is not too long, that is when its thickness is within moderate limits, excision of the constricting ring, with subsequent stitching of the upper and lower edges of the mucous membrane, forms, to my mind, the ideal method. The loss of blood may be reduced to a minimum by beginning with the continuous suture as soon as a small portion of the ring is excised, and following up the cutting with suturing. This plan I pursued in my case, and the hæmorrhage was only trifling. By introducing a finger in the rectum, and holding the urethra well up with a sound, there should be no danger of wounding either of these structures.—*Medical Record*.

Recurrent Hydramnios.

Dr. C. E. STOKES reports the following unusual case in the *British Medical Journal*: Mrs. S., aged thirty-two, in the eighth month of her sixth pregnancy, suffered from swelling of the feet and legs, and from

* *American System of Gynæcology*, vol. ii, p. 27.

† *Loc. cit.*

shortness of breath. I found the abdomen greatly distended, the breathing very labored, and the urine loaded with albumin. She had been unable to lie down for the past week. The distention of the abdomen was due to an abnormal quantity of liquor amnii. The foetal heart was inaudible and the symptoms were urgent, so I punctured the membranes and drew off the fluid into a bath, very little being lost. It measured twenty pints. The membranes and placenta were normal in appearance. Mrs. S. states that, of her previous five pregnancies, the same state of affairs was present in two, labor coming on spontaneously at six and seven months respectively. I should mention that the patient is, in my opinion, the subject of Graves' disease.

Spurious Hermaphroditism.

(The following interesting case was presented before one of the County Branches of the British Medical Association.)

Mr. CHRISTOPHER MARTIN showed a case of spurious hermaphroditism—a person with the external genitals and general characteristics of a woman, but with the essential organs of a man. He was aged twenty-one, had been brought up as a woman, and had earned his living as a nursemaid, kitchenmaid, and barmaid. In February, 1894, he consulted Mr. Martin with reference to a painful swelling in the left inguinal region. Mr. Martin cut down on this and removed a body which proved to be an undoubted testis. The patient's voice was rather low pitched, but not masculine. There was no trace of beard, whiskers, or mustache. The breasts were flat and poorly developed. There was no hair on the external genitals. These exactly resembled those of a woman, consisting of a labia minora and majora, a vestibule with the meatus urinarius, a small clitoris, and a vaginal ostium with the remains of the hymen. The vagina was a blind *cul-de-sac* an inch and a half long, and there was no trace of a uterus. He made a good recovery from the operation. In September a painful lump formed in the right groin, somewhat similar to that which had appeared on the left, and in October, 1894, Mr. Martin cut down on it and removed what proved to be the right testis. He made an excellent recovery. After the first testis was removed hair began to grow on the pubes, and he developed symptoms of hysteria; and after the second was taken away the breasts became swollen and tender and more fully developed. At the same time he complained of "heats and flushes," which recalled those of the menopause. Mr. Martin showed the two testes and microscopic sections, kindly made for him by Professor Allen.—*Brit. Med. Jour.*

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MARCH, 1895.

HOW TO DO ABDOMINAL SECTION WITHOUT FUSS,
FEATHERS, AND FOOLISHNESS, WITH
IMMUNITY FROM SEPSIS.*

* BY JOSEPH PRICE, M. D., PHILADELPHIA.

The profession was very slow to acknowledge the correctness of the pathology of pelvic diseases in women, as demonstrated by Bernutz and Goupil. Their almost mathematical presentation of the subject was received with ill-expressed disregard, and characteristic criticism, both harsh and unprofessional. Mr. Tait did much to open the way for the ultimate reception of their views, and his work must always stand a monument to the period of the most remarkable progress in modern surgery. Cavilers may carp, and envy strive to belittle, but to the minds of the generous and just, there is no question as to his merit. From 1872 to 1888 there was a remarkable regularity in the advancement of both the theory and practice of pelvic surgery, but since this latter period there is much to discourage the practical and progressive mind, which is never satisfied to abandon progress, or to go forward, looking backward, or to be satisfied with obsolete or obsolescent methods. If we take the trouble to look up the papers of this latter period, we shall find them already quivering with doubt, and quivering from disaster. Many men who without training or drill, or previous education in any branch of medicine, rushed into the abdominal field as the road to ready fame, have begun to redress

* Read before the Medical Society of the District of Columbia, November 28, 1894.

their steps, doubt the correctness of their absolutely ignorant, but no less positive statements and to hedge behind their so-called conservative opinions, for which their crude work had built the foundation. This had been well, had it only reacted upon themselves, but the effect was of wider extent, and the reading profession were misled into considering their cry for quarter, as an honest surrender. This defection indeed has got beyond the line of current literature, and invaded the presumably standard books of the day. Men who are supposed to be an authority on what they write, because they are backed by medical colleges and standard publishers, are deluding the profession, by a counterfeit presentation of experience, and present that as general which is only the shady result of their own limited knowledge, which presumes to teach, while it has yet all to learn. The pathology of these pseudo-instructors, is at fault and their conclusions surgically considered, are not to be considered or trusted. Of pathology, there must be a working knowledge, not, necessarily a microscopic one, but such information as will enable the operator to understand what he is likely to meet, why it is thus and so, and the results of certain complications, and the necessity of dealing with each one specifically as it arises. To start out in any line of work, with a fair show of success, there must be a preparation both subjective and objective. The objective preparation in pelvic work is applied to the patient. She is to be duly purged, and her intestinal tract thereby freed from *débris* which may interfere with post-operative comfort. An empty bowel has better tone than a distended one. For the purpose of catharsis, calomel and salines should be used, according to the peculiarities of the patient. Light, simple, liquid nourishment is to be preferred, while in feeble cases the antecedent administration of strychnine is of value. The patient is to be thoroughly cleansed, and kept clean while all the rules of personal cleanliness are to be applied both to the nurse and the surroundings of the patient. It often is questioned whether successful operation can be done in and under conditions which do not permit of rigid cleanliness, so far as the room itself is concerned. My answer from an extensive personal experience, is that the best results have been obtained, under the most adverse conditions, but these have only been reached, by extra care and painstaking avoidance, of accidental introduction into the immediate field of operation, the filth of the surroundings. This last assertion is to be taken literally. Cleanliness by soap and water is all that is required. I do not use nor advocate the use of any chemicals whatever, and consider that the

operator who has need of corrosive poisons to render him fit for the operating table, had better take a month's vacation to prepare himself for the safety of the patient. Chemical solutions bring into the field of operation an additional danger of irritation. This is great enough owing to the nature and character of the interference.

Here as in all other operations the less the paraphernalia and complexity, the less the danger of annoying delays and impediments to speedy and careful, uninterrupted work.

The incision should be as short as is consistent with the removal of the diseased part. This is of importance also at the close of the operation. The smaller the incision the less we have to deal with in closing. If the tumor is irreducible, the incision must be longer than otherwise. Adhesions are to be dealt with as they are found, and not passed by. Ligation of bleeding points must be carefully attended to. All points of bleeding do not necessarily require a ligature. The hæmostatic forceps very readily controls many of these, especially in the incision. Too numerous ligatures introduce an irritating element into the surgery of the pelvis and abdomen whose evil is far reaching, and should be avoided. All pathological conditions should be removed as they are discovered. Adhesions, freed, *débris* consequent upon these removed, and the really diseased organs carefully separated and tied off. Leaking vessels must be controlled, and must be primarily handled so as to excite as little hæmorrhage as possible.

This is accomplished by breaking the adhesions down with the cushioned end of the finger, using the nail practically not at all, and the scissors or knife never, unless where it is absolutely necessary to tie. After adhesions are loosened and ligatures placed, the toilet is to be looked to. Drainage is the most essential feature, and this is begun by flooding the abdomen. The abdominal douche is as necessary for successful surgery in the peritoneal cavity as is soap for common cleanliness. The sneerers at drainage all with common consent acknowledge the efficiency of flooding out the abdomen to clear it of *débris*, pus clots and the like. Not only does it do this but it is a powerful stimulant in shock, and enables many a successful recovery to be made, where otherwise we would lose our patient. Now drainage, I mean glass drainage, not a gauze masquerade, simply continues the good work initiated by abdominal flooding. It permits the escape of lymph, the smaller clots, the serum from the irritated surfaces, and conduces to bringing the peritonæum into a more natural condition. Gauze simply abstracts fluid as such, and does not permit of the elimination of anything else whatever. It is interesting to note in

this connection that those operators who so bitterly opposed drainage some little time ago, now commonly pack the pelvis full of their so-called gauze drain from vagina to and through abdominal incision, and with the same consistency yet violently oppose supravaginal extraperitoneal hysterectomy which when perfectly done does away with all intraperitoneal tinkering, and closes without even leaving a sinus. All gauze packing opposes prompt healing, except that by adhesions, and therefore the less of it we use the better we are off, except in those cases in which it is desired to wall off a cavity, such as the seat of a suppurating appendix which it is impossible or rash to remove at a primary operation. The closure of all abdominal wounds should be made with silkworm gut. This makes a perfect splint for the abdominal walls, is nonirritating, and safe. For other needs of abdominal work, I find fine silk the desideratum, it has many advantages over catgut, but above all is safer and cleaner. Again it is much stronger in the finer threads, and therefore permits the use of a less bulky thread. After the essentials of the operation comes the after-treatment. Here I find no reason to diverge from the lines I have so often laid down, to wit : that rest, position, and simple diet without anodynes are the essentials. I do not allow my patients to be shifted for the first twenty-four to thirty-six hours, for the reason that in abdominal wounds and tying, absolute quiet, I hold, is just as essential as in other surgery, such as that of bones, or plastic work, and after all much of abdominal and pelvic surgery is only plastic work on a large scale. Milk should be avoided as a diet in most cases. Anodynes are not indicated save in those cases in which the opium habit has been previously contracted, and the operation urgent.

The vast majority of patients are better without it, in every way, physically, morally and mentally.

So much for the real necessary common sense of abdominal section.

As to the opposite of this, in all that pertains to abdominal work of every sort, there has been so much written, and so much said, suggested, and attempted, that just at the present time, we are in a tremendous muddle. Men who do not know how to drain, cry out "There is no need of drainage in abdominal work. The man who is in favor of it is a dirty operator." These same men would not argue drainage away from other branches of surgery, and yet in the abdomen, where in many cases the dirt and *débris* are boundless, they waive this important step in the technique of abdominal section aside, forgetting that assertion is not argument.

These same men are ever ready to adopt anything new, or original, be it suggested by a nightmare or hypnotic ecstasy, only so it attract by its air of novelty, be it by a patent abdominal sewing machine, or a new German Salvation, vacuum, wherein both patient and operator are made to breathe sterilized ethereal ozone, and perspire some never-failing never-ending antiseptic.

Boiling water to these ogglers of foreign fads, has become so cool, that it will no longer scald or clearse (at least, so it is believed in Germany, where they ought to know), and in its stead is imported, a real German bake oven, which can be heated hotter than the scriptural fiery furnace, and the little sinning microbes, unlike Shadrach and the other two, can not stand the strain. All this is a combination of fuss and feathers. Let us see. Instruments baked, assistants oxalated, permanganated, bichlorided, floor tiled, with the chance of three out of five of the nurses menstruating, or ending it up with a discharging irritating leucorrhœa, with the water supply and drain communicating directly with a sewer, and the operation attended, perhaps, by fifteen or a dozen men, all of whom have come from filthy street-cars or dirty carriages, or perchance even from stables, if perhaps they have an oversight of their own conveyances. This is fuss, feathers, and foolishness. The trouble is that too many err in imagining that cleanliness comes from antiseptics. This is not so. The man who can not be clean without bichloride, can not be clean with it.

Being clean by spasm is like trying to become a society man by buying a dress suit. It is all right for theory, but it won't work. If looks were all, and nothing back of them required, the goal would be reached; but not so. Put it down, that the men who dwell the most on the ultra-refinements of Listerian surgery, do so only in the hope of succeeding in some way to overcome failures, in themselves, which they are loath to acknowledge.

This is not fuss or feathers or foolishness alone. It is false pretense. He parades to the learner and to the outside world, that all surgery is reduced to the hoo-doo of chemicals, or the Trendelenburg position, and that these make surgeons and surgery easy. We are waiting for the book, *Every Man his own Surgeon: A Crying Need to protect us from Quackery*.

Fuss in surgery is of two kinds, as are most other sensations, subjective and objective. Objective sensational fuss is of the sort I have briefly and generously and gently referred to, withal, seriously. Subjective fuss is due to the natural tendency, drilling and disposition of the operator. I have known an operator to leave his patient before

closing the incision to discuss a specimen removed. Only a pathological devotion completely overshadowing the surgical instinct, can explain a freak like this. In my work I hate stupidity, whether in assistants, nurses, or onlookers. I hate it worse in myself. When I quarrel with myself in my work, I know I am a ringleader in a conspiracy against the life of my patient. If I learn that an operator curses his sponges, nurses, damns the eyes of his needles, and sends his knife to a place hotter than his Dutch bake oven, I look for many of his patients in another direction.

One thing an operator has to learn. He is the head, judicial legislative, and operative in all that concerns his patient. He is bound to see that all is in working order, before he begins work. He is to know that all around him are trustworthy and efficient. If he is in doubt about this he has no right to begin work.

If he begins work without skilled assistance, he must know himself capable of going through it without assistance. In the event of failure, he has no right to bulldoze those around him or lament their inefficiency. Subjective fuss combined with objective feathers, reduces surgery to a farce, and the operation often to a tragedy.

MODERN SURGERY OF THE PELVIC FLOOR IN WOMEN.*

BY GEORGE H. KIRWAN, M. D., WILKESBARRE, PA.

The subject of this evening's essay on "Modern Surgery of the Pelvic Floor in Women" is one that has been much studied, written upon and discussed and, in many of its phases, almost worn threadbare, and I would scarcely be pardoned for inflicting the old ideas of the pathology and surgical repair of these lesions on this Society of modern surgeons but that the title of my paper includes very much more than what was once known as lacerations of the perinæum. My defense for asking your attention to it to-night is the very marked advances made in the pathology and treatment of these lesions since this subject was last considered by this Society.

This paper is based upon twelve years' personal experience in the surgical repair of these lesions; upon a recent hospital experience

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with Dr. J. M. Baldy and Dr. Joseph Price of Philadelphia and Dr. Emmet of New York ; and upon one hundred letters from prominent American gynæcologists, covering mooted points in the causation, pathology and repair of these *post-partum* injuries.

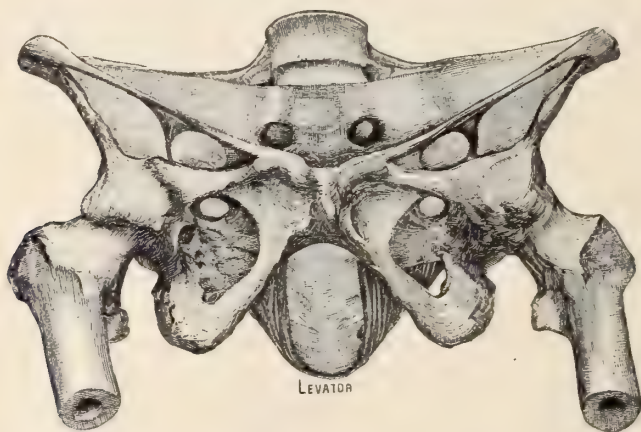
Perhaps nothing will better illustrate the advances in the pathology and surgery of *post-partum* traumatisms than to ask your attention to this book published but twelve years ago by that eminent surgeon D. Hayes Agnew of Philadelphia, and which would to-day be regarded as totally erroneous teaching. The teaching surgeons who promulgated the plausible but false doctrine of a perineal body and its function that of a support for the uterus, inculcated errors in the pathology of these lesions, that it seems almost impossible to correct : so let us to-night at least begin correctly by right here understanding that the perinæum as "a triangular body" does not and never did exist, and that the function alleged for it of supporting the uterus is utterly untrue, because the uterus is suspended by its ligaments, and supported in this manner from above, just as are all other organs in the body. It is not propped up by a supporting body from below for, if this were the fact, procidentia and complete prolapse would follow all complete tears, which is not only not the rule but a very rare exception to it. The perinæum, for the purposes of this article, may be described as the movable point of attachment for the transversus perinæi, sphincter vaginæ, sphincter ani, levator ani and the pelvic fascia, and also as the movable point of attachment for the lower end of the rectum and lower end of the posterior wall of the vagina ; it is composed chiefly of firm fibrous tissue, such as forms the ligaments of muscles in other parts of the body, and consists of two parts : the outer or superficial and deeper or inner part. Externally, are the transversus perinæi, external sphincter vaginæ and perineal fascia. Internally, we have the great levator ani, some of its fibers forming the internal sphincter ani. The strong pelvic fascia which sweeps down from the sides of the pelvis, helps to form and strengthen the pelvic floor and makes, with the levator ani, a firm ligamentous band at and in front of the lower end of the rectum." As special importance is attached, in what is to follow, to the great levator ani muscles and their superjacent fascia, let us briefly go over their surgical anatomy. "The levator ani is a broad thin muscle situated on each side of the pelvis, attached to the inner surface of the sides of the true pelvis and, descending, it unites with its fellow of the opposite side to form the floor of the pelvic cavity. It supports the viscera in this cavity and surrounds the various structures which pass through it. It arises,

in front, from the posterior surface of the body and ramus of the pubes, posteriorly, from the inner surface of the spine of the ischium ; and between these two points, from the angle of division between the



This figure and the one below it (Buckmaster's "Vaginal Anus and its Treatment"), present the levator ani muscle.

obturator and recto-vesical layers of the pelvic fascia at their under part, the fibers pass down to the middle line of the floor of the pelvis and are inserted, most posteriorly, into the sides of the apex of the coccyx. Those more anteriorly unite with the same muscles of the



opposite side. *The middle fibers which form the larger portion of the muscle are inserted into the sides of the rectum, blending with the fibers of the sphincters and in the female the anterior fibers descend upon the sides of the vagina ; so that in reality the levator ani muscles*

form with the strong fascia the whole floor of the pelvis," penetrated by the outlets of the rectum and, in the female, the vagina. Its function is exactly what its name implies, that of *lifting up* the pelvic floor and the outlets to which it is attached.

ÆTIOLOGY OF PELVIC-FLOOR LESIONS.

You can readily understand there might be a variety of causes that could occasionally result in lesions of the pelvic floor; but for the purposes of this article and as a clinical fact, the vast majority of these lesions follow childbirth and result from the following principal causes: (1) Precipitate labors; (2) Prolonged second-stage labors; (3) Improper use of forceps. My belief from a bedside study of labor is that, in a perfectly normal labor, two opposite forces are always exerted, working in harmonious opposition to each other, and that, when these muscular forces are properly proportioned, the one to the other, childbirth without *post-partum* lesion is the result; when these two opposing forces are disproportioned or out of harmony with each other, injury to some part of the pelvic floor results.

These two forces are the *vis a tergo* of the uterine walls, the abdominal muscles and fixed diaphragm on the one side; and the *vis a fronte* or resisting forces of the great levator ani muscles and fascia of the pelvic floor on the other side. In the normal proportion between these opposing forces the resisting power of the pelvic floor is *gradually overcome*, after sufficient dilatation of pelvic floor and vaginal outlet has taken place, and birth without lesions results; but precipitate labors, rapid forceps deliveries or any improper interference (or want of interference in the case of precipitate labor) with this condition, on the part of Nature or the accoucheur, will usually result in a traumatism at this time. Thus it is that so many of these pelvic-floor injuries of the pelvic fascia and levator ani muscles occur by the improper use of forceps, and, as Dr. Howard Kelly aptly adds, also the "use of improper forceps"; for, any physician who will take the trouble to investigate through the rectum the condition of things revealed to his examining finger, when the long forceps are upon the head upon the pelvic floor, will never again use them there if he be a conscientious man. In the first position of the head the extremity of the long blades will be found extending beyond the head an inch or more and displacing the rectal pouch to their right, plowing deeply into the floor, generally in the left vaginal sulcus and when, as is usual in the hands of inexperienced physicians, the instruments are left on to complete delivery of the head and the handles are elevated as soon

as the occiput engages under the symphysis, in order to save that (to their minds) most precious and important of all structures—the “perineal body.” An extensive internal forceps injury to the pelvic floor usually results. They have thus done a hundred times more injury to that mother than if instruments had never been used. There is but rarely a necessity for the use of obstetric forceps, once the head has got down on the pelvic floor, and if this rare necessity confronts you, these short forceps should always be used. There is no condition in obstetrics that warrants the use of the long forceps on the pelvic floor, and the keeping on of these instruments for the delivery of the head, after it has been brought down upon the floor, shows lamentable ignorance or criminal carelessness of the injury they can cause to the muscles and fascia of the pelvic floor. And I wish to further add, right here, that all accoucheurs will do safer and better work, and less injury, by applying the axis-traction principle of Tarnier in all cases, in the use of long forceps, than without it, unless possessed of a very unusual skill in their use.

Dr. Skene says, regarding the causes of injuries to the levator ani muscles: “One has but to recall the phenomena of labor, as related to it, to understand how it may be freely lacerated in ordinary labor. It certainly is as freely exposed to injury as some of the other muscles which we know are frequently lacerated subcutaneously. In delivery with forceps the levator ani muscle is frequently injured. I believe, while the child's head is in the grasp of the forceps and during traction, I have noticed by passing the finger into the rectum that the levator ani was drawn so tightly over the edges of the blades of the forceps that it appeared as if it must be torn. And I feel sure that it often is. I am the more fully convinced of the truth of this, by having carefully watched patients that I had delivered with forceps, and have found in some of them evidences of injury of the levator ani above its lower attachment; that evidence was obtained by finding on subsequent vaginal examination that the resistance of the levator ani, usually found, was wanting, also that there was prolapsus of the pelvic floor and loss of contractility upon irritation.” The ætiology of these injuries would, I suppose, be incomplete without some reference to the old teachings of supporting the perinæum or, more properly, the pelvic floor during labor. The matter is well summed up by the lately deceased Dr. Goodell, who says: “One advocates pressure on the perinæum by a folded napkin, another with an unfolded napkin; a third scouts all napkins whether folded or unfolded; one plugs up the rectum, another empties it. The perinæum is pushed

forward by some and backward by others. Some place their hand transversely across the perinæum; some longitudinally with the fingers looking upward, some longitudinally with the fingers looking downward, as runs the nursery rhyme—'Simon says: thumbs up, Simon says: thumbs down'—and yet the perinæum tears, and tear it will until woman becomes like the cherubs of the old masters—all wings and no body.

"Now all this diversity of opinion—and, mind you, I have not given you a tithe of the different modes of 'supporting the perinæum,' as it is technically called—means that Nature herself intends to take care of the perinæum, precisely as she does the preceding stages of labor, and that she can very generally do it better than any physician. But suppose the case is a morbid one and really needs help, what will you do? Why imitate Nature? She retards the too-rapidly advancing head, by making the woman cry out which at once stops the expulsive pains: you will retard the head by making direct pressure against it."

The above advice to my thinking contains the whole *summum bonum* of the obstetrical bugbear of what to do for prevention in labor of perineal lacerations and, as we are using the term perineal laceration quite frequently, I want again, here as in the beginning, to remind you, that a surface tear of the perinæum, whether it is superficial or extensive, is the least and most trivial of these injuries. In most of our text-books, if we look up the ætiology of this injury, I think the impression would be gained that these injuries are caused by an over-distention of the vagina or vulvar orifice by the child's head while, as a matter of fact, the real damage is caused by an overstretching or tearing of the levator ani muscle.

In concluding the causation of injuries to the pelvic floor we must of course revert to the neglect in so many cases to discover the injury at the time of its occurrence, otherwise it is to be presumed that the number of secondary operations would be almost nil and confined to the few women who foolishly or from force of circumstances pass through childbirth without the aid of an accoucheur, but the number of these secondary operations that call for the attention of surgeons doing this class of work are many, and can only be attributed to one cause, the ignorance, or more often, criminal carelessness of the attending physician at the birth, in not performing the primary operation. And in fact, in very many instances not even recognizing that a post-partum traumatism has occurred, for it is amazing that medical attendants fairly well qualified in all other ordinary operations of

the obstetric art, are so culpably neglectful of a thorough post-partum examination of the parturient canal, and a primary repair of any injury it may have sustained. As an illustration of this, Dr. Murphy and myself, some years ago, closed a complete laceration in the median line that extended through the anal sphincter and two inches up the septum, that had existed for fifteen years; during twelve years of complete rectal incontinence this woman had been a burden to herself and her family, and a prisoner in her own home through the neglect of her attendant at the time of her confinement. She again became pregnant and was delivered at term by a former member of this Society, *who never even discovered her extensive tear at all*, and for three years longer, she continued in ignorance of her condition being repairable by the art of surgery; when I saw her for a severe attack of bladder trouble, caused by residual urine from cystocele and as was afterward discovered a calculus and her tear was then repaired. This is a fair sample of the average treatment of many of these injuries and is a shameful reflection on the practice of midwifery in this enlightened age. After delivery of the placenta, in every case of labor the vagina should be douched out with a mild antiseptic solution, the hand resterilized and a thorough examination made both internal and external for any injury resulting from the passage of the child through the parturient canal, and no feelings of delicacy on the part of the mother or of being exhausted and worn out (the usual excuse given when any is offered) on the part of the accoucheur, should ever interfere with the thorough performance of this most important duty, but that this duty is culpably neglected is attested by the large number of secondary operations necessary for repair of these injuries.

PATHOLOGY.

The correct conception and knowledge of the pathology of these post-partum lesions is the true and unfailing guide to their proper surgical repair. Neither the frequency nor the clinical significance of lacerations of the muscles of the pelvic floor has been sufficiently appreciated in their connection with displacements of the pelvic organs and they are quite as important, if not more important, than lacerations of the perinæum; cases may often be seen in which the perinæum is torn through the sphincter ani, and yet the integrity of the pelvic floor has not suffered, and no prolapse or descent has taken place. The perinæum does not belong to the muscular floor of the pelvis, but lies wholly beneath it in cases in which the muscular floor of the pelvis is torn and therefore no longer fulfills its func-

tion, the anal cleft is partially obliterated due to sagging down of the floor, the anus is drawn backward and the vulva is relaxed and gaping : this condition often exists with a gaping introitus and a large rectocele and no tear whatever of the posterior commissure exists, even the fourchette remaining intact. To what is this condition due? *To submucous (usually) sulcus tears of the levator ani muscle at its attachment to the sides of the rectum* and lower outlet of the vagina, and not to any destruction of the so-called perineal body. When in a state of integrity, the vaginal canal is flattened upon itself, as it were, so that there exist but the anterior and posterior walls, and this approximation is brought about by the lateral attachment of the levator ani muscles, and the pelvic fascia, along the sides of the canal at the vaginal sulci, by which the posterior wall is lifted (and hugs closely the anterior wall) one of these sulci, as we know, extends the length of the vagina on each side. If the muscles and fascia forming these sulci remain intact, the two walls of the vagina must be kept in close contact thus the elasticity of these sulci uninjured, the pelvic floor will be held at its proper elevation, and the posterior vaginal wall will hug closely the anterior, as is the normal relation ; so that even in complete lacerations, the pelvic outlet is very often entirely closed by the efforts of the levator ani, which not only raises the pelvic floor, but draws it forward toward the pubis, when this muscle is intact ; when tears extend into the rectum they are almost invariably in the median line, and the levator ani not being in the median line, is not torn, and this is why we do not have rectocele or prolapsus in complete tears, and prolapsus occurs only in those cases of incomplete tears in which the levator ani is torn, for the reason I have mentioned. This is very briefly, and I appreciate, imperfectly, the pathology of these lesions ; and to the genius of Dr. T. A. Emmet, of New York, wholly belongs all the honor of having placed before the profession the true pathology of these lesions, and based upon it, the only rational and successful surgical procedure for their repair. When there exists no lesion, voluntary muscular action can be here exerted ; so that portions of the vaginal canal may be made to grasp the finger with the force of a sphincter : (as a reflex symptom in evidence of which, we have the involuntary action termed vaginismus, and a palliation of the symptoms of vaginismus, by surgical means, is gained only by a division of this muscle and fascia where it is reflected from the sulci, and where it is torn as a consequence of childbearing.) When the perinæum is torn during the progress of a natural labor the laceration begins behind and below, and extends forward and upward ; on the other hand

when the perinæum is torn by the use of forceps, the injury usually begins in the fourchette and extends downward and backward in the median line; this is in reality a cutting of the perinæum, and is the least harmful of all these injuries. In the great majority of cases, however, that come for secondary repair obliteration of the anal cleft from sagging of the pelvic floor, extensive retraction of the anus, retracted and patulous condition of the vulvar outlets and a large rectocele, is usually the condition that presents itself, and though generally attributed to a laceration of the perinæum, there is no laceration of the perinæum at all; but the condition results from an internal injury, nearly always a submucous tear of the fibers of the levator ani muscle which are normally attached to the sides of the rectum in the region of the sulci. When this levator ani and fascial attachment to the sides of the rectum is severed, and its resisting force destroyed, the anus and vulva are then drawn backward toward the coccyx, the vulvar orifice is elongated antero-posteriorly and made to gape, and the vaginal walls everted and rolled out and the anterior wall of the rectum, formerly concave on its vaginal surface, now becomes convex and ballooned out into the vagina and down toward the gaping introitus and is called a rectocele. My personal belief is that this condition is brought about always, and only, by more or less injury to the levator ani muscles in the sulcus, usually on either side of the rectum and more frequently, in my experience, in the left sulcus, because the first position of the head favors left-sulcus tears more than right, as well as the use of the forceps more frequently in this, than in any other position. This is a personal belief and may be taken for what it is worth. As Dr. Skene of Brooklyn mentions, pelvic injuries may be divided into two classes, those in the median line and those involving the levator ani muscle, which supports the pelvic floor at its proper elevation. The reason why rectocele and prolapsus do not occur in complete median lacerations, is because the levator ani muscles are not injured and they prevent it by compensation, for so long as they are not injured, the pelvic floor will be held at its proper elevation and in fact drawn a little above that point; so that even in complete lacerations, the pelvic outlet is very often almost entirely closed by the efforts of the levator ani, which not only raises the pelvic floor, but draws it forward toward the pubes.

OPERATION.

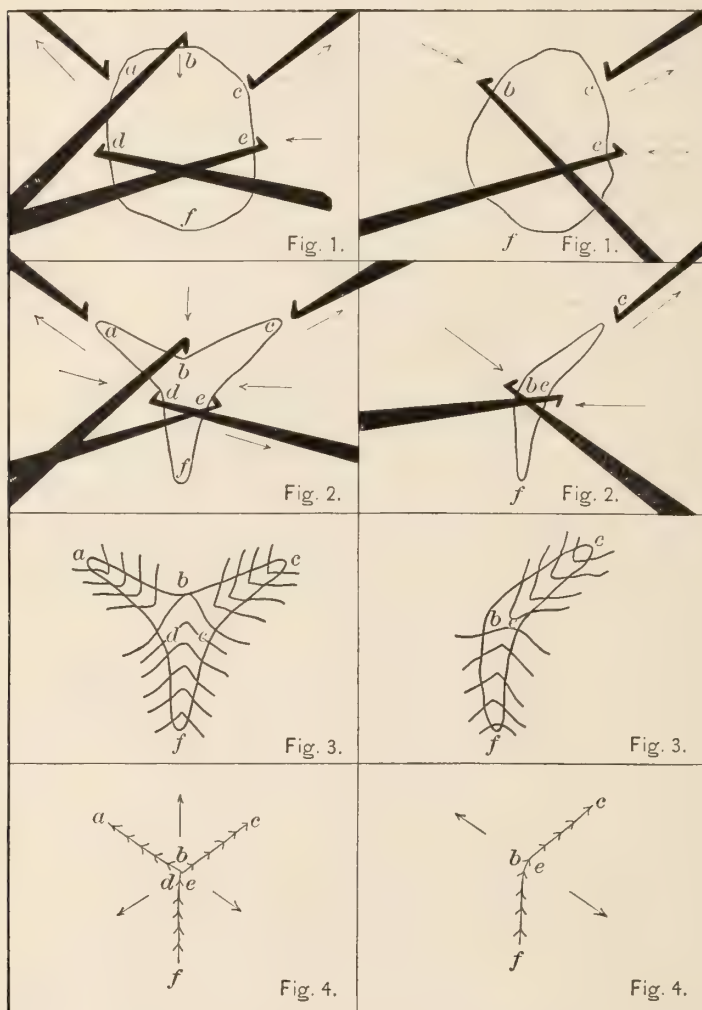
For the purposes of considering their operative repair we will divide these lesions of the pelvic floor into two classes, first those

in the median line, which may be complete or incomplete, but being in the median line do not involve the levator ani, and are not, therefore, complicated by rectocele as explained in the pathology; and second those involving the levator ani muscle which in my experience are usually sulcus tears and in which there is rectocele and prolapse, with gaping introitus, and retracted anus and sagging of the pelvic floor, and this is the condition of things that will best test the skill and pathological knowledge of the plastic surgeon.

In incomplete tears of the median line, a stitch or two deeply placed after delivery will usually result in good union and above all other times or places may it be here aptly said, that "a stitch in time saves nine," and much subsequent pain and suffering besides; and in the performance of the secondary operation for this form of tear, denudation in the ordinary way and the placing of proper sutures, almost always results in good union. In the secondary operation for tears involving the sphincter ani and extending up the septum Dr. Emmet makes his denudation of the torn septum, carrying it well down over the perinæum so as to thoroughly expose the edges of the retracted sphincter muscle, and passes one row of buried sutures of silver wire, coming out in the median line just at the edge of the rectal mucous membrane, reinserts the suture and brings it out at a corresponding point on the opposite side; but always passes it somewhat downward upon one side and upward upon another, so that it lifts the tissues somewhat toward the anterior wall.

My own practice has been to close the septum after denudation with a continuous catgut suture passed from the rectal side down to the retracted ends of the sphincter ani and after denuding these retracted ends to catch the sphincter ani muscle with a tenaculum and pull it out of its sheath and in full view, so that you may see just what you are doing; sew its freshened ends securely together by two or three interrupted sutures and then complete the continuous suture by bringing the tissues well up around the united sphincter ani, then placing the usual vaginal sutures in the proper manner for uniting the vaginal and cutaneous surfaces up to the highest of the caruncula, these however are the ordinary procedures for perineal repair: but the condition in woman that makes her an invalid, and life a burden, is the form of post-partum lesion in which as before mentioned there may or may not exist these perineal rents, but in which there has been an injury to the *levator ani muscles* and the pelvic fascia destroying in some part the integrity of the pelvic floor and allowing of retraction of the anus and vulvar openings, sagging of the floor, large rectocele

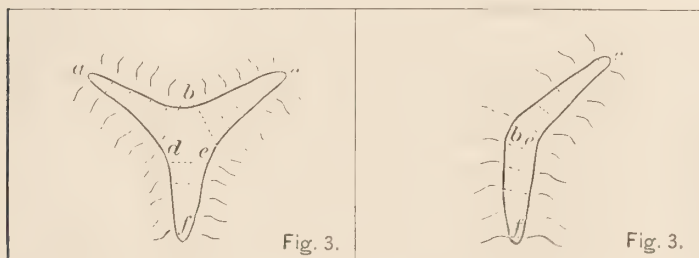
and large gaping introitus; and as Dr. Emmet has shown causing all the symptoms complained of by destroying the normal support of the pelvic vessels and causing congestion of all the pelvic contents. This



GROUP I.—(From Dudley's "Mechanics of Perinæorrhaphy.") Method of suturing and repair in tears involving both sulci. Fig. 3 altered to show the author's method of directing the sutures.

GROUP II.—(From Dudley's "Mechanics of Perinæorrhaphy.") Method of suturing in the repair of a left sulcus tear. Fig. 3 altered to show the author's method of directing the sutures.

is the condition of things that I ask your especial attention to and is of infinitely more importance than the simple or complete perineal tears, and in the proper repair of which injuries the plastic surgeon can do infinitely greater good to suffering woman than by any other surgical operation known to me ; and for the correct pathology, and as naturally follows, the proper operative repair of which, we are indebted to the extensive practical experience and great surgical skill of that father of plastic surgery in this country, Dr. Thomas Addis Emmet of New York, and anticipating some opposition to the teachings and methods of Emmet in the discussion of this paper to follow. I want to say here that no surgeon should attempt criticism of Dr. Emmet's work unless he has first thoroughly familiarized himself with the pathology of these lesions as taught by Dr. Emmet, after a long life study of them, and having observed Dr. Emmet himself (as has been my good fortune) perform the surgical work for their repair ; for diagrams but poorly, and descriptions still less so, give a correct conception of the results of Dr. Emmet's methods. His own descriptions



From Dudley's "Mechanics of Perineorrhaphy.") Dudley's method of directing the sutures. Compare with Figs. 3 and 3 on opposite page.

even, which I take the liberty to quote freely from, do not make the operations perfectly plain to every one. Let us begin by asking ourselves and understanding what the indications are, what we want to do, and then having done it as Dr. Emmet advises, the result will be so surprising to you that you will readily, in simple justice, concede that it is the only procedure for the repair of these lesions founded on a correct pathology and following sound surgical principles and giving the most perfect results, and must therefore be the only correct method. The indications are plainly "some procedure which is capable of changing the rectocele or existing convex surface of the recto-vaginal wall to a concave one, and at the same time, capable of *lifting* the posterior wall of the vagina up into close contact with the anterior

wall. The effect of this change would be the taking in of the 'slack' of the retracted vaginal fascia, to roll in again the everted vaginal outlet, to restore the anus to its natural position, to bring together the separated levator ani muscles, and finally, to regain in this manner the needed support for the pelvic vessels. By this means the woman is relieved and restored to health."

This work must all be done within the vagina, and the underlying principle of it all (after of course proper denudation) is what I term the V-shaped lifting sulcus stitch of Emmet, a proper knowledge of, and experience in, the placing of these angular lifting stitches, especially, in either or both sulci, is the keynote to success in the plastic repair of the condition under consideration. The extent of denudation will of course vary in different cases and will depend upon the extent of the cicatricial tissue, the size of the rectocele, and other conditions; but there are certain anatomical landmarks which are used as guides and are of the greatest value for this purpose. In Dr. Emmet's own language, the operation is briefly thus described: "The first step in the operation will be to determine within a reasonable degree the extent of retraction which has taken place in the fascia along the sulcus on each side of the vagina. It would, of course, be a futile effort to seek this information directly at the seat of the injury as indicated by the scar line. By an illustration I can better indicate my method of doing so. If we were to place two weights at some little distance apart on a table cover before us and then make traction by drawing a portion of the cover toward us, two folds would at once be formed leading up to the outer edge of the weights, and it would be clearly indicated that the cover, loose elsewhere, was immovable within the influence of the weights. If we place a woman who has received this injury on her back in front of us, and with her limbs flexed, the labia will be seen widely separated, the vaginal canal open and filled by a projecting portion of the recto-vaginal septum, or what is termed, as you know, a rectocele. Now we can find some point in the middle of the projecting mass from which, if we hook a tenaculum into it and draw that portion forward and upward toward the neck of the bladder, two folds will be formed, as I have shown on the table cover, leading outward to a fixed point in the sulcus on each side. These fixed points indicate perfectly the limit of the retraction and show clearly that the portion of the vagina above the limitation indicated is properly supported.

"Bear clearly in mind that this triangular-shaped tongue, or portion of the rectocele, which we draw forward with a tenaculum will

form after the operation the posterior wall of the vagina. If this step of the operation has been properly performed, the rectocele will have been disposed of, the two walls of the vagina will lie in contact, the line of the axis of the canal will have been changed to that of a concavity, and the proper degree of support will have been gained along the newly formed sulci by a direct union with the pelvic fascia. Later on I will describe the next step for bringing near together the separated levator ani muscles, but must first go more into detail in regard to the first steps of the operation.

“As the woman lies in front of us and the top or crest of the rectocele has been drawn down with a tenaculum toward the neck of the bladder, it would be well to put a loop of strong thread into the tissues to take the place of the tenaculum. This is necessary because the angle of the fold must be held by an assistant *in situ*, until the parts on the sides have been secured with sutures. After the introduction of the loop of thread, and while it is being properly held by an assistant, we must find the lowest caruncula or remains of the hymen on each side to indicate the limit of the vagina. A tenaculum is then hooked into a caruncle on each side, and outward traction is made by the assistants laterally, to open the vagina. A triangular, deep, gutter-shaped surface on the right and left of the canal will be formed with the apex of each, running into the lateral sulcus above. Now to define the extent of the surface below, that the line of proposed union may be within the vaginal canal, a third tenaculum should be hooked into the posterior portion of the vagina and in line with the two caruncles, which have been separated by the lateral traction of the assistant's hands. Then, by drawing downward with this tenaculum we have thus clearly mapped out the full extent of surface on each side which is to be denuded and united together. Interrupted sutures must be used, and I prefer silver wire. I introduce the sutures separately on each side, beginning with the angle or apex of the triangle, in the upper part of the vagina, and put one in after the other, at about a quarter of an inch apart, until we reach the neighborhood of the loop in the center of the rectocele and approach the caruncula on the side. Then the sutures are to be introduced on the other side in like manner. It is well to secure the sutures of each side together in the grasp of a separate pair of forceps, to avoid mixing them. The next step is to introduce the sutures to close the sides of the vaginal outlet, and to bring together, at the same time, the separated levator ani muscles. The crown suture, as

it is termed, is now the first one to be inserted. This is done by passing a suture close to the caruncula referred to, on the right side, deep into the tissues toward and in front of the ramus on that side, and then bringing it out at the edge of the denuded surface about half an inch posterior to the point of entrance. I then carry the needle across, catch up the topmost part of the denudation in the rectocele, and re-entering into the denuded vaginal wall about half an inch behind the caruncula on the left side, I bring the stitch out again close to the denuded edge at the caruncula to correspond with the point of entrance on the right side. Now as we draw together the parts with this suture, we get the first indication of what is to be accomplished by the operation. Some three or four sutures more will be needed below, and these are to be introduced in the same manner and in the same direction as just described, one below the other, until the lower angle in the direction of the anus is reached. These last sutures appear to be outside of the vagina, but they are not so in reality, for as one after the other is secured, the parts roll in more and more, until finally, these sutures are lost to sight between the folds of the labia. In twisting the sutures, begin with the first and secure each one in the order of its insertion. Bend each one carefully down after it is twisted on the vaginal surface, where they must remain until the parts are perfectly united. As each suture is twisted the upper and lower walls of the vagina are gradually brought together, by lifting the posterior one. When the outer sutures have been all secured, there should be no gaping of the vagina; the labia should lie together, and the external appearance should be that of a woman who has never borne a child. When the operation has been properly performed the natural elasticity of the parts will have been restored fully, and it is even possible to place the woman on the left side and introduce a Sims speculum without doing material damage by strain on the sutures.

"The operation is rather a tedious one, but simple in execution. It certainly does restore the parts nearer to the original condition, than is done by any other method I know of, and is the only one that will fairly stand the test of a subsequent labor. This operation is not always, even generally, I regret to say, performed by others as I have described it."

This is briefly, Dr. Emmet's own description of his operation and one that always gives most satisfactory results when properly performed. Personally, I give special attention in this operation, to *deep denudation in the sulci*, in order to unite torn fibers of the levator ani. I

always go deeply until I find muscular tissue and then pass V-shaped sulcus sutures deeply buried so as to in this manner catch up and unite the torn ends of the levator ani muscle. We may here refer appropriately, to all other perineal operations only to condemn them, because founded on a false pathology they must be wrong in principle. The old Baker-Brown operation, including extensive denudation of the labia, united tissues never normally in contact, and the flap-splitting operation improperly sometimes called Mr. Tait's, makes but a skin perinæum, and while it looks very well on the cutaneous surface possesses nothing to recommend it besides its cosmetic effect. "Many such perinæi are in this way built up in front of large rectoceles by operators ignorant of the indications for operation in this class of cases." Dr. Baldy leaves such a skin perinæum as it is, but goes on and does Emmet's plastic work within the vagina, and "then and not until then," is that woman properly repaired. Dr. Joseph Price takes his scissors and slits all such perinæi down to the sphincter, and then does Emmet's radical operation. Dr. Emmet says of these superficial perinæi made by simply closing the tissues at the vaginal entrance, "So long as the energy of the operator be expended as of late in building up an obstruction of fat and skin anterior to the vaginal outlet with the idea of restoring the 'perineal body,' a body which does not exist, and so long as he continues to form a dashboard-like obstruction which keeps the vagina more or less filled with urine, women must continue to be subjected to unnecessary suffering, and to receive no benefit." I want here to briefly refer to the statement of some surgeons that "we follow Emmet's teachings in the cases where his operation is indicated, but no one operation is applicable to all cases." Dr. Emmet's operation modified, of course as must be all surgical operations to meet the indications and conditions in each case existing, *is applicable* to the repair of all lesions of the perinæum and pelvic floor and is the only surgical procedure that is. You will observe that I have not touched at all upon the operative technique because the technique can only be acquired by clinical experience and actually witnessing the work.

In closing I can not refrain from quoting a few of the many just expressions of praise for Dr. Emmet and his plastic work by leading American gynecologists. The great mass of specialists doing plastic work follow Dr. Emmet's teachings: Dr. J. M. Baldy of Philadelphia, says, "to Dr. Emmet, in my opinion, belongs all the credit of the correct pathology, and founded upon this, the proper plastic repair of these lesions."

Dr. Howard Kelley of Baltimore says: "The principle and the genius of the operation belong to Dr. Emmet."

Dr. Jewett of Brooklyn says: "Dr. Emmet has done much more than any other observer to elucidate the nature of the injuries in question and to point out the right line of procedure for their repair."

The eminent Dr. Skene says, speaking of Dr. Emmet's operation, "It is the only operation which ever did the slightest good in these cases. It is always successful if properly performed. I saw many cases operated on by Dr. Emmet completely cured and it was because my own patients used to go to him that I watched his method of operating so closely with the hope that I might cure them myself and save him the trouble. I know that his is the only method."

Dr. Joseph Price of Philadelphia says of Dr. Emmet's operation "His procedure stands pre-eminent among the scientific suggestions and methods of modern gynæcology. Its logic is unassailable and its results can not be fairly challenged. His work is as delicately true and exact as an Italian mosaic, while his technique is so simple that to follow it needs only commonplace attention. His demonstration of the scientific value of his method is as accurate as that of any mathematical proposition, and criticism of the ends obtained, or of the method pursued, arises either from ignorance or misunderstanding."

CONCLUSIONS.

1st. Tears of the levator ani, pelvic fascia and transversus perinæi are frequent post-partum lesions, often with the vaginal mucosa remaining intact.

2d. Cases of large rectocele and serious internal lesions of the pelvic floor, often occur in which the posterior commissure and even the fourchette remain uninjured.

3d. The improper use of obstetric forceps (especially the long forceps on the pelvic floor) is a frequent cause of internal lesions of this character.

4th. The most frequent seat of these lesions, is either or both sulci, most frequently the left vaginal sulcus, due to first position of the head and to the more frequent use of the forceps in this position.

5th. As a rule when the perinæum is completely severed, there is no rectocele, and the position of the uterus is not affected by such a lesion.

6th. When the levator ani muscle is torn, especially in either sulcus, obliteration of the anal cleft from sagging of the pelvic floor, retrac-

tion of the anus and posterior commissure toward the coccyx, and gaping introitus with everted vaginal outlet and large rectocele is the result.

7th. Dr. Emmet's methods for surgical repair of these lesions are the only rational methods based upon a correct pathology, and uniformly successful when properly performed.

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SOME PRACTICAL POINTS ON THE DIAGNOSIS AND TREATMENT OF PELVIC HÆMATOCELE WITH REPORT OF A CASE.*

BY W. E. COLGROVE, M. D., HORSEHEADS, NEW YORK.

The causes which lead to the production of pelvic hæmatocele are well known to be rupture of any of the pelvic blood-vessels, sudden cessation of the menses, rupture of tubal or other forms of extra-uterine pregnancy, rupture of aneurisms of blood-vessels of the broad

* Read before the New York State Medical Society, February 5, 1895.

ligaments, reflux of blood from the uterus or Fallopian tubes or any general hæmorrhagic diathesis of the patient or in some instances well-defined cases of purpura or transudation from the smaller blood-vessels in or around the pelvic cavity, so that in this brief paper I need not take up the time in discussing them, also that there are two general varieties, the intraperitoneal and the subperitoneal of which the intraperitoneal is by far the more dangerous. I beg, however, to differ with Thomas that the subperitoneal variety is not dangerous. in my judgment any amount of blood accumulated in the pelvic cavity is to be regarded with suspicion.

With a brief report of a case I will try to bring out as well as time will permit some of the more important points in the diagnosis and treatment. I was called to see Mrs. S. aged thirty-five years on August 15th; found her to be a plethoric woman of rather nervous temperament. She had been driving three or four days before and jumped from her carriage to the sidewalk. She felt a sudden pain in the pelvic region with faintness and some degree of shock, was assisted into a neighboring drugstore and after a short time resumed her journey home. A physician was called who pronounced it an acute retroflexion of the uterus and vainly attempted its reduction, the effort being attended with great pain and faintness and some vomiting. On the next day another attempt was made to replace the supposedly retroflexed organ without success, on the fourth day I saw her, and after learning the history of the case made an examination *per vaginam*. The os uteri was of normal size and shape and not in the position usually assumed by the os of a retroflexed uterus. On passing the finger into the posterior *cul-de-sac* of Douglas a round hard tumor not unlike the occiput of a fœtus was felt. No fluctuation could be detected, the mass was apparently fixed and immovable, very tender to the touch, a flexible uterine sound was introduced and the curve of the uterine canal found to be nearly normal. Examination *per rectum* was attempted but as it was impacted with fecal matter an enema was given and the bowel cleared. The finger revealed the tumor, hard, round, posterior to the uterus completely obstructing the bowel. There had been no symptoms of extra-uterine pregnancy and as the temperature had risen to 102° and symptoms of general peritonitis could be detected, I diagnosed pelvic hæmatocele of subperitoneal variety which had existed so long that absorption of the blood serum had taken place, and we now had to deal only with the firm blood clot already partly decomposed which had dissected up the peritonæum, which membrane now formed the roof or upper wall

of the tumor. Calling in an assistant who kindly gave an anæsthetic and with the aid of a large sized duck-bill speculum holding the roof of the vaginal wall well up I made an incision an inch and a half in length in the post-cervical region and with a dull curette and a small placental forceps succeeded in clearing the cavity of the mass of blood clots which gave rise to quite a perceptible odor. The cavity was now thoroughly irrigated with solution of bichloride (1 to 4,000), a drainage-tube introduced, and the wound closed with interrupted suture of large size catgut, the vagina carefully and loosely packed with iodoform gauze which was changed twice the first day and once a day thereafter. The temperature fell to 100° in six hours and to normal in twenty-four hours, the drainage-tube was removed on the second day and perfect recovery took place in ten days.

I would especially call your attention to the character of the tumor, usually they are fluctuating, this one was hard and fibrous in character, the diagnosis should be made carefully. To diagnose a retroflexed uterus in a case like the one given is humiliating in the extreme. Diagnosis by exclusion is a very good way to arrive at a correct conclusion. The uterine sound should in my judgment always be used before making pressure necessary to reduce a misplaced uterus excepting in cases where pregnancy is certain or suspected. If the bowels are obstructed the rectal tube attached to the fountain syringe should be passed above the obstruction if possible and the contents drained away in a semi-fluid state thereby reducing the pressure and aiding in relieving the danger of rupture into the abdominal or peritoneal cavity. The existence of aneurysms and diseased blood-vessels should be carefully inquired into, also as to whether the menses occur regularly and without unnatural disturbances likely to occur in acutely misplaced uteri. The questions of extra-uterine pregnancy should receive careful attention.

Surgical interference is in my opinion authorized and necessary when the amount of blood being poured out demands ligation of blood-vessels ruptured or when the blood clot becomes practically a foreign body and threatened septicæmia appears thereby proving that Nature is unable to absorb the product of the hæmorrhage. Pressure should never be made in any case against a tumor in the *cul-de-sac* of Douglas to replace a retroflexed uterus until all doubt of its being an abscess or hæmatocele have been removed and never as an aid to diagnosis with any degree of force.

The tumor always becomes harder and more tense on the third or fourth day. The malady may be almost certainly recognized by its

sudden onset whereas ovarian cyst, perimetritis with abscess fibroids and extra-uterine pregnancy, etc., are of slower origin.

The small aspirating needle is of value in the early stages but will fail to give positive signs after the serum has been absorbed. I do not regard the vaginal incision as dangerous and much prefer it to abdominal section, although in some cases the latter will be found necessary if ligation is to be resorted to. In a majority of cases the blood clot causes but a small amount of trouble and is removed by absorption.

Should the patient be seen early hypodermic injections of ergot and caffeine may be given with success. The patient should be kept flat on the back with head but slightly raised. The predisposition to hæmatocele is most marked during the period of ovarian excitement and menstrual occurrence.

Compresses and bandages applied to the abdomen are of service both in allaying the hæmorrhage and causing absorption after the bleeding has ceased.

THE PREVENTION OF HERNIA AFTER LAPAROTOMY, WITH EXHIBITION OF A DEVICE FOR RELIEVING THE STRAIN UPON THE ABDOMEN.

BY HENRY S. DURAND, M. D., ROCHESTER, N. Y.

The nonoccurrence of hernia after laparotomy will depend, first, upon the degree of care which has been exercised in making the incision and manipulating through it, in order not to lacerate its edges and leave them clean and smooth for close apposition; second, upon the degree of asepsis in simple cases, and antisepsis in cases complicated by purulent exudation, obtained while conducting the operation; third, upon the pains taken to properly close the incision, and apply a dressing; fourth and last, but by no means least important, upon the method employed to support the abdominal walls on either side of the incision, and relieve the strain upon the young scar-tissue.

We hear a great deal at the present day in regard to "the inch-and-a-half incision" in the operation for appendicitis; and no doubt there are some gentlemen who are fortunate enough and combine such powers of persuasion with such powers of diagnosis that they

see their patients almost before the latter are aware that they are not in their usual health, and, operating through the inch-and-a-half incision, take out the would-be offending member before it has had any chance at all. They encounter no adhesions, and have no difficulty in removing the worm which has begun to sap the root of the vital tree. The wound always heals by first intention. The stitches are removed, a piece of plaster is applied to support the abdominal wall—and there you are. The writer can only admire and wonder at the skill of men endowed with such marvelous faculties and good luck; but he can not at the same time avoid deploring the want of judgment on the part of others, whose desire to operate through very small incisions sometimes causes fatal or untoward results.

The incision is made and the finger is introduced. Adhesions are encountered, but, with his eyes fixed upon the ceiling or upon the faces of the bystanders, the operator with an expression of profound wisdom goes prodding about, sometimes as roughly as though the peritonæum were made of sheet-iron and utterly destitute of blood-vessels. Often, it is true, all goes well, but occasionally blood-vessels are ruptured, and profuse if not fatal hæmorrhage is produced; or the wall of the inflamed appendix is broken, and the possibility of general peritoneal infection arises.

Again, it does not seem reasonable that the surgeon can manipulate through an incision of inadequate length without bruising and lacerating its edges, producing superficial necrosis of the tissues, and greatly diminishing the probability of union by first intention. It would seem, therefore, in view of dangers just mentioned, that, except in the simplest cases, nothing is gained by the very short incision. The cut should be long enough to give the operator room to manipulate with some degree of freedom, and grant, as well, a fair amount of aid from the eyes which the Creator has placed in the head, in addition to that obtained from those which every surgeon should endeavor to place in the ends of his fingers.

Hackneyed as may be the theme, a few words must be allowed on the subjects of asepsis and antiseptis. We desire to secure, first intention, in order to make the line of cicatricial tissue as narrow as possible. Absolute asepsis depends on and can only be obtained by absolute conscientiousness and constant presence of mind, on the part of *every one* connected with the operation. Is there not, even at the present time, great carelessness (that is, lack of presence of mind) exhibited by nurses, house officers, assistant surgeons, and—yes, upon occasion, even by the Chief himself? To take a few examples:

The electric light may be in demand, and a nurse, eager to please by acting quickly, springs forward and grasps the cord and light, quite neglecting to cover her hand with a sterilized towel, and not remembering, that the hour or the day before, the same electric light had been held by a ward-tender who had just set down a basin of foul pus.

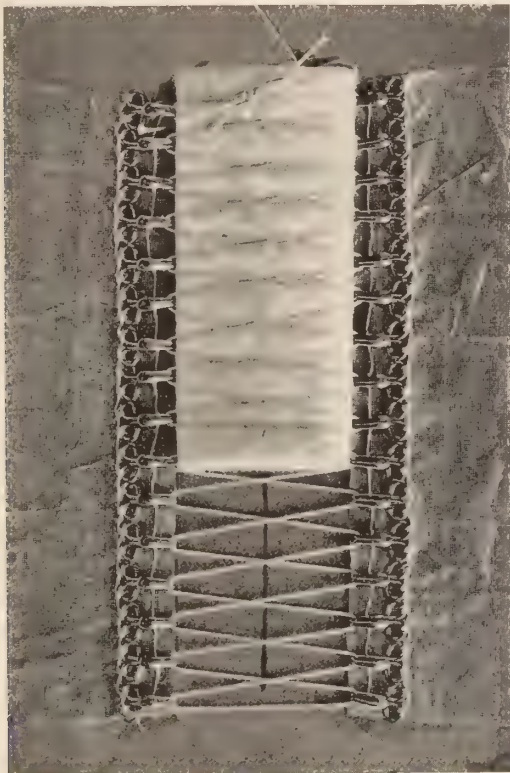
The nurse, having been excused from holding the innocent-looking light, returns immediately to her occupation of washing sponges or handling instruments. Suppose, while waiting for the patient to be brought in, the surgeon, or one of his assistants, feels a sudden itching sensation on the face or head. Will there always be inhibition exercised to control the almost reflex action which carries the hand to the spot of irritation? The head is not always considered as a source of danger, and it is rather humiliating to reflect that simply bowing the head over the wound may, by the fall of dandruff into the incision, cause infection and loss of first intention. The head should be covered with a sterilized towel, and by this simple precaution one more weak link in the aseptic chain is removed. It would be instructive and amusing if the actions of every one who takes a part in a single operation could be closely observed and noted. Probably the greatest inconsistencies would appear in the report of many operations, and the failure to obtain primary union could be easily explained.

Antiseptic procedure is called for whenever there is any reason to believe that the fluids in the wound or peritoneal cavity are not perfectly laudable, to use an ancient expression. Simple irrigation with sterilized water is not sufficient. Some fluid, having germicidal power and harmless to the peritonæum, must be employed in addition.

Of these the best is peroxide of hydrogen employed in strengths varying according to the extent of the surface to be irrigated. Where the surface is small the pure fifteen-volume solution may be used, and where the whole peritoneal cavity is to be washed out one part of the peroxide to ten of warm water is to be prepared. A large amount of this solution may be used without fear.

In closing the incision the peritonæum should be united by a separate suture of sterilized catgut, and be sure that it is sterilized gut in reality, as well as in name. The skin and underlying tissues may then be drawn together by sutures of silkworm gut, placed about a quarter of an inch apart and passed in the following manner: The straight Peaslee needle is to be introduced, about a quarter of an inch from the edge of the incision, through the skin and underlying tissues, passing downward and outward toward the side of the body corre-

sponding to the side of the incision from which it was entered. The point is then carried inward and brought out at the bottom of the wound, just above the peritonæum ; care being taken not to injure or include this structure. One end of the silkworm ligature is passed through the eye and the needle is withdrawn. The needle is again



entered on the opposite side of the incision passing downward and outward toward the corresponding side of the body, through the skin and underlying tissues, and the point again carried inward and brought out at the bottom of the wound just above the peritonæum. The free end of the silkworm ligature which has just been passed is introduced through the eye, and the needle again withdrawn. We now have a suture which is like a purse-string, and pulls the structures underlying the skin into close apposition when it is tied.

The incision having been closed the device represented in the two diagrams may be used with advantage. It may be applied at the time of the operation or just before the sutures are removed. The device is made as follows: A strip of *crêpe-lisse* is cut three inches and a half wide, and twice and a half the length of the incision. Half an inch from one edge of the strip, a fold is made running the entire length. Along this folded edge small hooks, such as are used by dressmakers, are sewed, in such a manner that the ends



of the hooks come even with the edge of the *crêpe-lisse*, as close together as possible. The device can be made in a few minutes and of course should be ready before the operation. The skin on either side of the incision should be washed with alcohol and afterward with ether and the strip, having been cut in two, is applied to the skin with collodion, half on either side of the incision.

The object of washing the skin with alcohol and ether is to render

it perfectly dry and free from oil or blood. When the strips have been thoroughly fastened to the skin, a dressing can be laid over the incision and over this dressing a lacing can be passed around the hooks, in the same way that a shoe-lacing is passed over the tongue of the shoe. This device is far superior to plaster. Plaster, when moistened by perspiration, slips and should there be any suppuration, pus will promptly remove plaster strips and make with the adhesive material a most disagreeable compound. Plaster causes itching and sometimes excoriations of the skin. The *crêpe-lisse* and collodion are not open to any of these objections and the dressing can be removed in a moment by simply undoing the lacing. When the time comes to remove the sutures the dressing should be taken off and the lacing reapplied. The sutures should then be taken out between the lacings. The device should be left upon the abdomen for twelve weeks, and should be laced tightly enough to take the strain off the scar entirely, until it has had time to become firm and unyielding. Not only is the strain on the skin relieved, but on the underlying tissues as well; for having been held close together by the sutures, all the layers of the abdominal wall have become, along the line of the incision, more or less adherent to each other.

In conclusion it may be remarked that the device just explained is excellent also for drawing together cuts on any portion of the body, often rendering the use of sutures unnecessary; a matter of great importance especially in cuts on the face, where sutures are likely to leave unsightly scars.

A NEW METHOD OF CLOSING THE ABDOMINAL WOUND AFTER CÆLIOTOMY.*

BY RALPH WALDO, M. D., NEW YORK.

During the past few years the operation of cœliotomy has been so perfected that at the present time its performance is of daily occurrence in all the large medical centers and no operator thinks of publishing any but his exceptional cases. Yet no honest surgeon will guarantee the patient's life, much less a cure of the disease for which he operates, or exemption from subsequent diseases due to the opera-

* Read before the New York State Medical Society, February 5, 1895.

tion itself, very prominent among which is hernia in the cicatrix of the abdominal wound, and the object of this paper is to present a method of uniting the divided structures so as to reduce this unfortunate and many times serious sequela to a minimum.

In explaining this method it is needless to give a minute description of the anatomy of the anterior wall of the abdomen; but it is sufficient to call attention to the fact that in the main it is composed of the following structures from without inward, skin, fat, fascia, muscle and peritonæum. Spencer Wells advocated including all of the structures in silk sutures and laid special stress on the importance of a careful coaptation of the cut edges of the peritonæum. Many have considered this latter detail of little moment, prominent among whom is Lawson Tait. This method with variations as to suture material has been and is still followed by many prominent abdominal surgeons. Another set of operators appreciating the importance of having homogeneous structures unite, stitch the layers of the abdominal wall separately and so bury sutures, that may be composed of non-absorbable material, as, silk, silkworm gut and silver wire; or of absorbable material, as, catgut and kangaroo tendon. In the abdominal

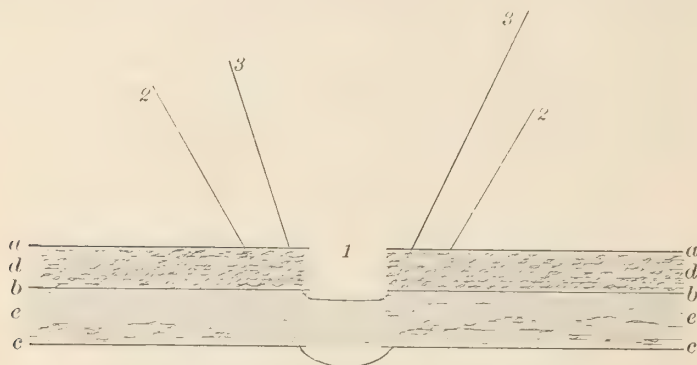


FIG. I.

wall I think that it is very seldom necessary to bury stitches and when it is I believe it much better to use absorbable material for the suture.

As far as I can learn all operators agree that it is most important to have the fascia unite accurately to guard against hernia and with this object in view and a belief that the two protecting structures the skin and peritonæum should be approximated without the use of the buried suture the following method is presented:

Fig. 1 represents a transverse section of the anterior abdominal wall about three inches above the symphysis pubis—*a*, the skin—*b*, the fascia—*c*, the peritonæum—*d*, fat and superficial fascia—*e*, muscle, muscular sheath and a small amount of fat—1, the abdominal wound—2, a deep silkworm-gut suture entering from half an inch to an inch from the edge of the wound depending upon the thickness of the abdominal wall and going through the entire thickness including the edge of the peritonæum and emerging at a corresponding point on the opposite side—3, a silkworm-gut suture entering not over a quarter of an inch from the edge of the wound and including the skin (*a*) fat (*d*) and fascia (*b*), but not going deeper and coming out on the opposite side correspondingly. Fig. 2 represents the abdominal wound (1) closed by means of the sutures 2 and 3. The deep sutures (2) are about half an inch apart and the sutures (3) including the fascia are midway between them. The material of which this suture is composed will depend upon the preference of the operator. I use silkworm gut.

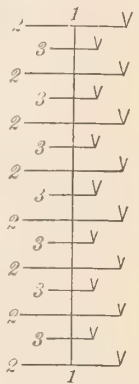


FIG. 2.

Theoretically suppuration should not take place in a wound or around a stitch but practically, in the hands of the most careful operators, it does at times. If suppuration takes place around a buried suture especially if it is a continuous one you will frequently have a good deal of trouble and I have seen extensive burrowing and in rare instances the entire wound has opened and healed by granulation. Of course this last accident is very infrequent; but as a rule when suppuration takes place around a buried stitch there is more or less burrowing of pus which is seldom the case where the suture comes to the surface for as soon as evidence of suppuration shows around a stitch it can easily be removed.

In a comparatively short time sutures that are placed in living tissue will cut to a point where there is no strain on the tissues and when that has taken place the suture is of no further use. In closing the abdomen after cæliotomy everything can be accomplished by the suture that I have described that can be accomplished with the buried or mixed suture and in case suppuration takes place it can be kept in narrow bounds and much more easily treated and where there is no suppuration foreign material will not be left in the tissues.

In a large percentage of cases it is impossible to thoroughly approximate homogeneous structures where only a deep suture is used so as to include the entire thickness of the abdominal wall.

In conclusion. This method of closing the abdominal wound has the following advantages :

1. It accurately approximates homogeneous structures, especially the fascia.
2. No sutures are buried which may give rise to immediate or remote trouble.
3. In case suppuration takes place it can be easily treated and the burrowing of pus prevented.
4. It thoroughly supports the wound as the effect of deep and superficial sutures is produced.

During the past two years I have used this suture in a large number of cœliotomies and have been very well pleased with it.

68 WEST FIFTIETH STREET.

CLINICAL REPORT SHOWING THE TOLERANCE OF THE PERITONÆUM AND NATURE'S KINDNESS • TO THE SURGEON. •

BY HENRY L. ELSNER, M. D.,

Professor of Theory and Practice of Medicine, and Clinical Medicine, Syracuse
Medical College.

On the 7th of August, 1893, I was called in consultation by Dr. Lake of Fulton, N. Y., to see Mrs. F. A. G., aged forty-three years, family history negative, nullipara, who gave the following history :

She had been unusually healthy and vigorous during early girlhood and womanhood. Menses first appeared at the age of fourteen, and as far as she knew, until about three years before the advent of the symptoms which finally caused her to consult a physician, she had been in perfect health. When about thirty-nine years of age, she began to complain of vague uterine and ovarian symptoms, which persisted until she finally consulted a noted gynæcologist in the western part of the State, who made a careful examination, and decided that she was suffering from cystic disease of both ovaries and enormous uterine fibroids, recommending a radical operation. This was about twelve months before she came to Syracuse, where she was treated for some time with large doses of galvanism, after the method of Apostoli.

About this time it was noticed that the fibroid growth was rapidly increasing in size, and she was suffering great loss of blood at short

intervals. The weight of the growth became burdensome, the mental depression great; which, associated with anæmia from loss of blood, prompted her to seek further advice.

About the 20th of March, 1893, she went to New York, where she consulted an eminent gynæcologist, who also diagnosed enormous uterine fibroids and ovarian cysts, and advised immediate operation, explaining fully to both husband and patient the dangers of such procedures, but giving sufficient encouragement to justify the performance of the radical operation. On the 25th of March, 1893, in one of the leading hospitals of New York, as a private patient, Mrs. G. was operated upon. The uterus and ovaries were removed. The operation was a difficult and tedious one, owing to a large number of adhesions to almost all the surrounding parts. The patient during the operation became excessively weak, the entire operation occupying over two hours. The surgeon who operated, from whom I received a detailed description of the operation, remarked that it was one of the most difficult of its kind which he had ever performed; and from those who witnessed the operation, it has since been learned, that in the hands of a less experienced operator and one less dexterous, the woman would, in all probability, have died on the operating table.

After the operation there were no untoward symptoms; at no time did the temperature rise above 101° , reaching that point only once. The pulse was uniformly good, and in four weeks the patient was able to be moved to a hotel, where she remained three weeks, returning to her home in Fulton in eight weeks from the time of her departure for New York.

The abdominal wound healed perfectly before she left the hospital with the exception of a small sinus below the umbilicus, the opening of which was not large enough to admit more than a small-sized silver probe, leading down about an inch and a half. This is shown in Fig. 1.

This sinus the attending surgeon ordered washed out daily with a solution of peroxide of hydrogen and packed with iodoform gauze.

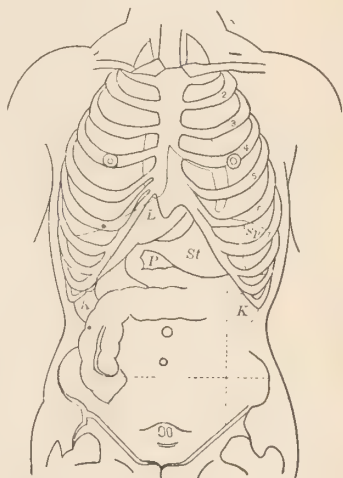


FIG. 1.—Opening of sinus in median line. (Showing relative position.)

This was done by the husband, the patient feeling so well after her return from New York to Fulton that no physician was called. Indeed, her condition was so good that she took long drives into the country, and visited friends in distant parts of the State. About the end of July, 1893, four months after the operation, the patient commenced feeling tired, complained of headache, chilliness, without well-defined chill, and thought that she had a slight elevation of temperature during the early evening hours. About the 2d or 3d of August, it was noticed during the dressing of the sinus that a bit of thread plugged the opening after the use of the peroxide. This was carefully removed by the husband, and proved to be one of the ligatures left in the abdominal cavity. It was supposed that this occurrence would be followed by a closure of the fistulous tract and a disappearance of the malaise and other disagreeable symptoms, chief among which, about this time, were headache and diarrhœa. About the 3d or 4th of August all the symptoms increased and Dr. Lake of Fulton was consulted. He found the patient with a temperature of 103° , the pulse averaging between 110 and 120, respirations 18, complete anorexia, with peculiar pains of a griping character, recurring every few hours. These paroxysms of pain were associated with insomnia and great restlessness. I made my first visit to the patient on the 7th of August, when I found her anæmic, temperature 101.5° , pulse 120, respirations 20 per minute. Her leading symptoms at this time were slight chills, loss of appetite, recurring abdominal pains—which she characterized as gripes, localizing them in the right inguinal and hypogastric region—watery diarrhœa, and great restlessness. The painful regions were tender to pressure, and the patient complained that they were swollen. She was despondent and much discouraged. Physical examination of the abdomen showed on inspection the opening of the sinus pictured in Fig. 1. Into this we were able to introduce a fine silver probe for a distance not to exceed two and a half inches. The abdomen in its lower right quarter was abnormally prominent and palpation revealed the presence of a tumor the size of a man's fist, which seemed tender to pressure, had a peculiar boggy feel, gave no fluctuation, and occupied a portion of the right inguinal, right lumbar, umbilical and hypogastric regions, as is shown in Fig. 2, accompanying this paper.

Percussion over the tumor gave flatness, while around it the note was normal. The tenderness did not confine itself to any one point over the tumor, but was general. The abdomen was nowhere œdematous, rectal examination was negative, pressure laterally caused a

moderate discharge of pus and fluid from the sinus. Taking all the symptoms into consideration, with the previous history of the patient, including the operation and the persistence of the discharge through the sinus, and the escape of a ligature a few days before my visit, I concluded that the mass which I felt was in some way associated with the original trouble, or was a sequel of the operation. Before reaching this conclusion, we eliminated, after thorough discussion and consideration, the possibility of the presence of an appendical abscess. The most natural conclusion was that we were dealing with an inflammatory condition, possibly a phlegmon, provoked by the ligatures still in the abdomen, which we hoped would make their exit through the sinus, as did the one during the previous week.

The absence of fluctuation in a tumor so superficially located was suspicious and rather misleading. So firm was my faith in the diagnosis of an inflammatory condition due in some way to the operation, that on my return to Syracuse, I immediately telegraphed to the operator, describing the condition of the patient; but he was abroad and could not be reached. The treatment instituted was tonic and sustaining, including the local application of iodine to the swelling.

I saw the patient again in consultation on the 11th of August; found her with a temperature of 102, pulse of a much better character than when last seen, bowels loose, from five to six watery stools daily; the opening of the sinus in the abdominal wall much larger than at any time since her return from New York. The swelling and tenderness were but little changed. During the day a few shreds supposed by the attending physician to have been particles of silk thread, but no pus, came from the sinus. The patient appeared less nervous, was more cheerful and said that she felt better in every respect. For the relief of the diarrhœa I prescribed salol, bismuth and beta-naphthol.

On the 15th of August I again saw the patient in consultation with Dr. Magee of Syracuse and Dr. Lake of Fulton. While the

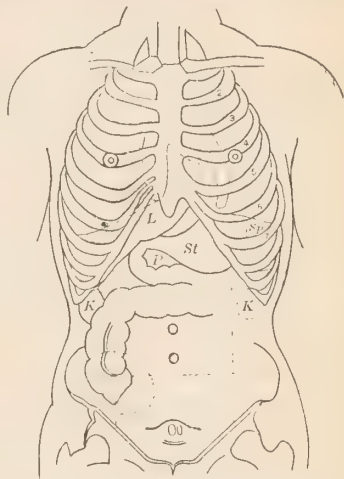


FIG. 2.—Relative position and size of tumor, as seen August 7, 1893. Showing sinus also.

general condition had improved, the temperature remained slightly elevated, the pulse ranged between 90 and 96, the sinus was still open. The advisability of an operation was considered, but in the absence of threatening symptoms and an appreciable improvement in the condition of the patient, it was decided to postpone surgical interference and continue the treatment already instituted. After this date, the reports from the patient, which were received almost daily, continued to show improvement, and the attending physician reported on the 1st of September that the patient was practically cured, and that the tumor had entirely disappeared. The sinus, however, had not closed, and the temperature had never been below 99, nor the pulse below 90, since the last consultation.

On the 21st of September, three weeks after the last report had been received from the patient, I was hurriedly called to Fulton and

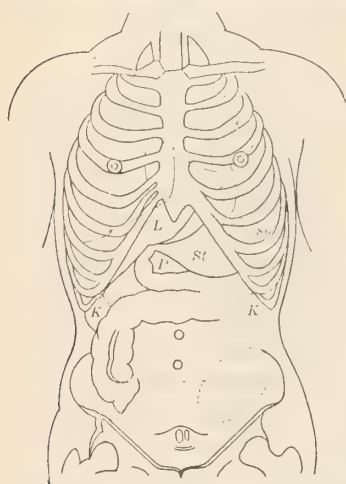


FIG. 3.—Relative position and size of tumor, as found Sept. 21, 1893.

found Mrs. G. suffering from persistent vomiting, constant nausea, with constipation and considerable abdominal pain of a griping character, *now in the lower left abdominal regions*. The sinus was still present in the median line, as large as when last seen. The tumor on the right side was no longer present, but a mass corresponding with it in shape, size, and location, was now easily palpated, occupying parts of the left inguinal, left lumbar, hypogastric and umbilical regions as shown in Fig. 3.

The temperature was 99, pulse 96, respirations 20. The symptoms warranted the conclusion that whatever trouble was present within the abdomen,

the probability of ultimate intestinal obstruction gave the case a serious aspect and prompted us to recommend immediate surgical interference.

Rectal examination continued negative. In the meantime the surgeon who had performed the original operation had returned to this country, and the husband of the patient, as well as those in attendance, were desirous that he be called and institute such treatment as the exigencies of the case demanded.

It may have been fortunate however, as the subsequent history of

the patient will prove, that the surgeon was not to be found at home, and that we did not resort to surgical interference. On the 24th of September, there was complete intestinal obstruction with projectile and stercoraceous vomiting. The patient was in a deplorable condition, the tumor on the left side was still present, the abdomen was enormously distended and tympanitic, the pains severe and the features pinched. All the physicians in attendance insisted on an exploratory laparotomy with the hope of ultimately relieving the intestinal obstruction. We left the patient with a temperature of 100.2, pulse 125 per minute, to return to Syracuse for the purpose of preparing for an operation, promising to return on the next train. Early in the day, we had commenced the administration of sulphate of magnesia and small doses of calomel. Shortly after our return to Syracuse, a message was received from the husband of the patient, stating that flatus had passed the rectum, that the pains were less severe, the abdomen was less distended, and the pulse was of better character. He asked us to postpone our visit until the following morning. Early the next day, we received the glad news that the patient's bowels had moved, and that everything seemed favorable, the physician in attendance having noticed a decided change in the size and position of the tumor. On the 26th of September, a dispatch was received from the patient stating that the cause of the obstruction had been removed. A large gauze pad, which I now show you, folded upon itself many times, surrounded by fæces, had passed *per rectum* about noon of the 26th of September. This pad had remained in the abdominal cavity from the 25th of March, 1893, until the 26th of September of the same year, a period of six months, giving rise to the train of symptoms and physical signs already related. The dimensions of the pad are eight inches and a half by seven inches, its weight is one ounce.

The patient never had a symptom after the escape of the pad and continues in perfect health. The sinus healed completely in from three to four months.

This case, with its fortunate ending, has seemed to me, from the standpoint of one who is often called to view with the surgeon the medical aspect of complications following grave abdominal operations, to be full of interest, revealing data sufficiently important to give it at once a prominent place in medical literature. The fact that Nature almost always makes an attempt to surround foreign bodies left in the abdominal cavity with an inclosing membrane, protecting the peritoneal cavity, has long been recognized. Habershon

in an article written as long ago as 1860 (*Guy's Hospital Report*), speaks of cysts developing around foreign bodies in the abdomen.

In the case reported Nature not only surrounded the gauze with a membrane sufficiently protective to shield the peritonæum from harm, but probably owing to the aseptic operation, no immediate peritonitis or suppuration followed. The mere fact that the peritonæum tolerated a foreign body of this kind after such a grave operation speaks volumes for itself, without taking into consideration the condition of the pad or the gravity of the operation. The length of time which was occupied in thorough encapsulation and ultimate peritoneal accommodation, if you will permit the use of the term in this connection, is another evidence of tolerance and Nature's wise provision. When all was ready, the pains which were described as gripes, were undoubtedly Nature's method of plowing a way for the offender to a location from which it could, without harm to the patient, make its exit in safety.

Among the most striking features of the case was the method of expulsion of the gauze, and the means taken to prevent the entrance of feces into the peritoneal cavity. At no time did rectal examination afford any clew to the cause of the symptoms of obstruction. The pad, after finding a resting-place either against the colon or small intestines, was undoubtedly surrounded by plastic exudate, while causing sufficient pressure to produce obstruction, shutting off the only source left for final infection, so perfectly, that after the passage of the gauze *per rectum*, careful examination failed to reveal the opening through which the pad entered the lumen of the tube. We at once instituted thorough cleansing of the colon, continuing the rectal injections for a considerable time after full restoration to health. To summarize, we have a case in which, after a major abdominal operation, the uterus and ovaries were removed for enormous fibroid and cystic disease, a sterile gauze pad was left in the abdominal cavity, remaining there six months and a day; this was at once surrounded with plastic material which must have encapsuled it, protecting the peritonæum, which became tolerant of the offender at once, never revolting until August, fully four months after the operation, when undoubtedly the excursion outward commenced. The small sinus was the only intimation of anything wrong within the abdomen during this time. The presence of the tumor first on the right side and finally on the left, is proof positive that the gauze crossed the pelvis, burrowing in a tunnel of newly organized tissue, and while it rested in a position against the intestine, causing intes-

tinal obstruction, the free peritonæum was being protected in all directions by abundant plastic exudate during the period of ulceration and final escape.

There is no similar case in medical literature, as far as I can find, after a long and faithful search ; no case in which a pad or sponge remained an equally long time in the abdomen ; none in which such a wonderful tolerance and protection was shown ; and none in which a like route was traveled with safety and final recovery of the patient.

The operator, dependent as he was upon his assistants, was unfortunately the victim of carelessness. The pads were counted after the operation and all reported in the hands of the head nurse. The count must have been made without lifting each pad separately. They were superimposed and one must have been folded upon itself and counted for two.

The cases in which foreign bodies are left in the abdomen are not likely to be reported. The surgeon fears publicity and the professional assistants are in honor bound to remain silent, when such an occurrence is unearthed. That lives have been lost in the past as the result of such accidents is shown by the meager literature on the subject, and it may be positively asserted that the larger number of cases have never been reported. On examining the literature of this subject I found the most exhaustive report yet made, in a paper by H. P. C. Wilson, of Baltimore, read before the American Gynæcological Society and reported fully in the transactions of that society for 1884. This paper gives the number of cases which he was able to collect in which foreign bodies had been left in the abdominal cavity after laparotomy, and includes the report of a case occurring in the writer's own practice, with conclusions arising therefrom. The whole number of cases which he collected was twenty-one, of which only five were published ; or six, including his case. This, according to the writer of the article proved "that more than two thirds of all the known cases never came to light." He says still further that he is sure "from the want of autopsies that the unknown are much larger than the known accidents of this kind." Six of the cases reported by Wilson occurred in this country, and fifteen in Europe. Of the six, five were unpublished, Wilson's case being the only one published of that number. Of the fifteen cases occurring in Europe, five were published and ten unpublished. "Of the six American cases, sponge was the substance left in five, and a forceps in the sixth. Two were fatal, and four recovered by the timely discovery of the foreign body. In one of the above six, the surgeon, who was a most careful opera-

tor, was closing the abdomen, when the assistant was sure a sponge was left behind. He ceased sewing and found the sponge among the intestines. In a second of the above six, the operator had applied all his stitches and was in the act of closing the wound, when an assistant told him a sponge was missing. The wound was opened and after some time the sponge was found behind the intestines."

In the third case, the abdomen had already been closed, a sponge was missed, the wound was opened, sponge removed and patient recovered. In the fourth case the sponge was found post-mortem. The fifth case had a forceps left in the abdomen after an operation; these were found post-mortem. In the sixth case, that occurring in Wilson's own practice, a sponge was left in the abdominal cavity for five months, which gave rise to symptoms from the beginning, with final suppuration, after a tumor had formed above the umbilicus, with considerable thickening and induration of the abdominal wall. Three months after the operation this opened and discharged a "large quantity of dark-colored, horribly offensive pus."

It continued to discharge freely for the next month, when injections were used, and on the 15th of July pieces of sponge commenced to escape from the abscess. A piece of sponge as large as a hickory nut was grasped by a pair of forceps and removed. This caused such bleeding that the operator made no further attempt to remove the remnants at that time; but they came away piecemeal until the 7th of August, when all had been removed. The patient made a rapid recovery. The woman was pregnant at the time of the operation for ovarian tumor and miscarried eighteen days after the ovariectomy.

Of the fifteen European cases mentioned in Wilson's paper, ten were unpublished, and of these no history is given.

The noted ovariectomist, Dr. John L. Atlee, lost a patient from lockjaw from whom he had removed a large ovarian tumor. At the post-mortem, half a sponge was found in the abdomen. "When the sponges were counted after the operation, the number was reported correct." Dr. Walter F. Atlee, in reporting the case to Dr. Wilson, wrote: "This was the last case upon which he operated before his health broke down, and it may have had something to do with his stroke." Dr. William Watkins Seymour of Troy, N. Y., called Dr. Wilson's attention to a case which occurred in Copenhagen, in which a sponge in the abdomen was found to be the cause of death after laparotomy. Dr. H. C. Coe of New York, whom I expected to take part in this discussion, finds it impossible, and kindly furnishes me with the following case which occurred in his practice:

"Hegar's operation for fibroid. Large gauze pad was left in the cavity of the pelvis. The patient had temperature for from three to four weeks, when the pad was felt under the wound and removed. The patient was up a week later, and now, after eight months, is quite well." He adds: "I have removed four sponges (post-mortem) from the cavity left by eminent operators who must, of course, be nameless."

To show the tolerance of the peritonæum, I am permitted to quote another of Dr. Coe's cases: "Abdominal hysterectomy for pus tubes. Rectum injured. Rectal enema of whisky and salt solution (not sterilized), given at close of operation and flooded the abdominal cavity, coming out through the wound. Irrigation with boiled water. Gauze drainage *per vaginam*. Rapid recovery without reaction."

Boeckel, in a paper über ungewöhnliche Toleranz des Bauchfells (*Gaz. med. de Strasbourg*, No. 7), reports a case in which the rectum was compressed by a uterine fibroid which had become wedged in the pelvis. Reposition failed, when finally colotomy was performed. The patient lived one month after the operation. The post-mortem revealed a rupture of the colon, probably produced at the time when reposition was ineffectually tried. A large, dry mass of feces was in the peritoneal cavity, thoroughly encapsuled.

My attention has been called to a case by Dr. Edebohls, since writing the above, reported in the *Centralblatt für Gynäkologie* by Salin, 1892, p. 460, in which a gauze pad was left in the peritoneal cavity for a year after ovariectomy, finally causing suppuration and ultimate extraction through the abdominal wall.

EXTRA-UTERINE PREGNANCY.

*Report of Three Cases.**

BY ARTHUR B. BREESE, M. D., SYRACUSE, N. Y.

Having been requested to prepare a paper on some practical subject to be read before you, I have selected the trite subject of Extra-uterine Pregnancy, as presented in three cases that have come under my observation. They have been of interest to me and I hope may

* Read before the New York State Medical Society, February 5, 1895.

prove so to you. Without occupying any of your valuable time with remarks I will proceed with the report of the cases :

CASE I.—Mrs. B. came to me six years ago giving the following history : She was thirty-five years of age ; had been married fourteen years ; had one child thirteen years of age. Her menstrual history had been remarkably normal until her present trouble. She had never aborted. She stated that she had had, about one year previous to seeing me, what was diagnosed as an extra-uterine pregnancy. This condition was not recognized until the third month. She was treated first by aspiration *per vaginam*, and a small amount of blood withdrawn. As the tumor continued to increase in size a strong faradic current was used, one pole being placed in the vagina and the other on the abdominal wall over the mass. This resulted in an amelioration of her symptoms, and a decrease in the size of the tumor. This diminution in the size continued up to the time of her consulting me. When I first saw her she complained of great pain and tenderness in the mass, painful micturition and defecation. She was unable to walk or to attend to her household duties without great suffering.

On examination, I found a mass high up in the pelvis, pressing the uterus forward and downward. It extended above the brim of the pelvis, and occupied the lower right lumbar, and entire iliac region. This mass was about the size of a cocoanut, and only slightly movable. On pressure there was great tenderness.

Objecting to operation she was treated with large hot douches, boroglycerin tampons, etc., with some relief, although there was no decrease in the size of the mass. This treatment was continued, at intervals, for two years. She then had an attack of severe pain in her right side. This was accompanied by a chill and a temperature of 102.2° F. The mass increased in size and tenderness during the succeeding days. I advised immediate operation, but she refused.

There were irregular exacerbations of fever which culminated, on the eleventh day, with a temperature of 104° F. During that night a foul-smelling diarrhoea set in with a marked decrease in the size of the mass and a relief from pain. Examination of the stools showed them to consist of pus, adipocere, and a few bony fragments. The patient slowly recovered from this attack, and one year later she consented to an operation for the removal of the old sac.

She was admitted to the Woman's and Children's Hospital of Syracuse, October 20, 1892. After the usual preparation of a week I operated, assisted by the hospital staff. Upon opening the abdomen

I found a mass about three inches in diameter, dipping down into the pelvis posterior and to the right of the uterus and extending upward toward the right, and firmly adherent to the surrounding structures. The most difficult part of the operation was the separation of the mass from the cæcum. Undoubtedly this was the place where the sac discharged its contents into the intestines one year previous. After the mass was freed from its attachments the pedicle was trans-fixed and tied with a double silk ligature, and the mass removed. The abdomen was then flushed with sterilized water. As there was considerable oozing from the torn adhesions, I used a glass drainage-tube.

The wound was closed with silk and two stitches including the skin, fascia and peritonæum were passed at the site of the drainage-tube and left untied. The dry iodoform dressing was applied. The drainage-tube was removed in thirty-six hours, and the two stitches were then tied closing the opening left by the removal of the tube. The patient made an uneventful recovery, her highest temperature being 99.2° F.

Examination of specimen showed it to be a sac containing about an ounce of cheesy pus. The walls were formed in part by inflammatory material and in part by the Fallopian tube which opened into it. The remains of the ovary were imbedded upon the anterior surface of the mass. This case seems to me to be a very good illustration of the remote dangers of the electrical treatment of extra-uterine pregnancy. If the patient had undergone the operation when the condition was first recognized she would have escaped years of suffering—for she was never free from pain until after the sac was removed. She would have escaped the danger of suppuration of the cyst, and its rupture, which, fortunately for her, was in a direction where it did the least damage. In addition, this procrastination allowed numerous attacks of localized peritonitis, with the resulting adhesions, which increased the gravity of the final operation.

I think this case is a strong argument against the electrical treatment when the pregnancy has advanced as far as the third month.

The two following cases are very similar :

CASE II.—Mrs. G., aged twenty-nine years ; Irish ; married five years ; has had two children, the elder four years, the younger nine months. Menstruation always regular, except while she was pregnant or nursing. The last child she was able to nurse but two months, as the secretion of milk failed. Menstruation returned one month after weaning. She continued regular for five months. Two weeks after

the cessation of her last menstruation she had an attack of severe bearing-down pain together with a profuse discharge of blood from the vagina. This confined her to bed for several days. Upon recovery she resumed her ordinary household duties, although the flowing continued in greater or less quantities, and she had daily attacks of pain of a colicky character. During the month that followed she states that she passed several pieces of skin, one of which looked like a bag. I first saw her about four weeks after her first attack. Her condition at that time was as follows: Much emaciated, very pale, ears waxy, lips colorless, anxious, drawn expression. Temperature, 99° F.; pulse, 110; respiration, 28. She complained of great pain in the lower part of the abdomen; urination very painful and bowels obstinately constipated. The flowing had increased and was dark-colored, with numerous clots, but no bad odor.

On examination, I found a large, and very tender, doughy mass, occupying the entire pelvis and extending upward to within one inch of the umbilicus. The uterus could be made out imbedded in the anterior surface of this mass and pressed forward against the neck of the bladder, the fundus of which (bladder) was raised above the pubis. The cervix was patulous and admitted the finger to the inner os. The breasts were negative. I directed her to be taken to the Woman's and Children's Hospital, and prepared, as soon as possible, for operation. She was so weak that it was deemed advisable to improve her general condition before operating. Accordingly she was placed in bed and given strong liquid diet with wine and the citrate of iron and quinine. Under this treatment she improved in general health so as to be up and about the ward, although the local conditions remained about the same. On May 21st I operated and found a large mass occupying the pelvis and the lower part of the abdomen, displacing the uterus and bladder forward. The omentum was adherent to the anterior surface of the mass. After this was detached the mass was found to be loosely attached to the surrounding tissues by recent adhesions. I had no difficulty in separating these until I came to a band low down in Douglas' *cul-de-sac*. In breaking this, notwithstanding the greatest care, the cyst was ruptured. Its contents, consisting of foul-smelling blood clots, were carefully removed, avoiding as far as possible the contamination of the abdominal cavity. After emptying the cyst I broke the troublesome adhesion and formed my pedicle of the right Fallopian tube and broad ligament. I used the Tait knot. The left tube and ovary being diseased, I removed them. The abdominal cavity was flushed with sterilized water and a large number of old

blood clots that had escaped when the cyst ruptured were washed out. A glass drainage-tube was introduced deep into the pelvic cavity, and the wound was closed with a single row of interrupted sutures, two being left untied where the tube protruded.

The operation lasted about an hour, and when finished the patient was in a profound shock. By the use of hypodermics of nitroglycerin, digitalin, strychnine, etc., she rallied for a short time and then began sinking. The median basilic vein was then opened and one pint of a three fourths of one per cent. saline solution was slowly injected. The pulse immediately improved, the pallor of the skin became less marked, the deathlike expression of the face disappeared and the patient regained consciousness in a short time. The improvement continued and she made an uneventful recovery. The temperature never rising above 100° F.

Examination of the tumor showed it to be a hæmatocele encapsulated by adhesive inflammation. The walls of the cyst consisted of laminated blood clots covered by inflammatory exudate. The right Fallopian tube communicated with the hæmatocele by a rupture on its posterior surface. The right ovary was imbedded in the anterior wall of the mass. No fœtus was found. Unfortunately the specimen was lost before a microscopic examination of the tube could be made.

CASE III.—Mrs. T., aged thirty-five; married nine years; menstruation began at sixteen, twenty-eight-day type, normal in amount and color. She had had three children, the oldest eight, and the youngest three and one half years. Two years ago she had an attack of metrorrhagia that lasted five weeks accompanied with severe pain in the right side. This pain has continued with greater or less severity ever since. Since the metrorrhagia she was regular as to menstruation until September 1, 1894. On that date she had an attack of very severe pain in the right side which completely prostrated her. This was accompanied by a bloody discharge from the vagina. About a week later she passed several pieces of "skin" *per vaginam*. September 20th, her breasts began to enlarge and become tender also morning sickness commenced. On October 11, 1894, I was called in consultation by Dr. Roth, of Syracuse. Two days before she had had a severe attack of pain in the lower part of the abdomen together with an increase in the bloody discharge. I found her in bed suffering great pain.

Examination showed the breasts enlarged and tender. The uterus enlarged, os admitting tip of index finger. Behind the uterus was a mass of doughy feel, filling the entire pelvis and extending upward

nearly to the umbilicus. The uterus was displaced forward crowding the bladder against the pubes. The rectum was so encroached upon that its lumen was reduced to a mere slit.

The patient was removed to the Woman's and Children's Hospital and prepared for cœliotomy.

On October 18, 1894, I opened the abdomen and found the following condition: A large mass composed of a blood clot was found occupying the pelvis and lower part of the abdominal cavity. This clot was incased by an inflammatory exudate. In attempting to separate this from the surrounding structures the fibrinous wall incasing it ruptured discharging its contents partly externally and partly into the abdominal cavity. After clearing out the cavity, the right Fallopian tube was found opening into it by a recent rupture on its posterior surface. I removed it together with the ovary.

The left ovary, containing a cyst the size of an orange, was also removed.

The abdomen was then thoroughly flushed with sterilized water, washing out a large number of clots. The wound was closed by a single row of sutures. A glass drainage-tube was used, which was removed at the end of thirty-six hours. The patient did remarkably well until the fifth day, when she had an afternoon temperature of 102° F. This temperature continued fluctuating, from 99° to 103°, for six days, when it became permanently normal. This was undoubtedly due to the absorption of a small accumulation of blood in Douglas' *cul-de-sac*. Examination of the specimen showed it to be almost identical with the last. A large hæmatocele incased by inflammatory exudate with a dilated Fallopian tube opening into it through a recent rupture on its posterior surface. As in the preceding case, no foetal structures were demonstrated.

The question of diagnosis in these last two cases I submit to your consideration. Some of the symptoms of early pregnancy were present in both cases. There were probably decidual casts in each, although these pieces of skin, as they were called, were not examined by me. In both cases I found ruptured tubes and large hæmatoceles. No foetal structures however were demonstrated. Am I justified in classing these two cases as hæmatoceles, due to ruptured tubal pregnancies?

DOUBLE PYOSALPINX EVACUATING THROUGH THE
UTERUS; CURETTAGE, FOLLOWED BY PREG-
NANCY AND DELIVERY OF A LIVING
CHILD AT TERM.*

BY EDWARD NICHOLAS LIELL, M. D.,
Lecturer on Gynæcology at the New York Polyclinic.

I am encouraged in my purpose, in availing myself of this opportunity, of bringing before you the notes of the following case in detail, both because of its uniqueness and the fact that I can find no record of a similar case in gynæcological literature, at least in the references at my command :

M. R. W., a relative of a prominent surgeon of this city, was, subsequent to a consultation, referred to me May 5, 1891. She gave a history as follows : Age, twenty-four years ; married ; has suffered acutely since her confinement two and a half months ago, although she had some trouble following a miscarriage three years previously ; her temperature I found to be 100.4° F.

Examination proved the uterus to be anteverted, with considerable fixation ; to the right and partly behind the uterus was an adherent mass the size of an ordinary lemon, causing some fullness of the vaginal vault on this side and giving a slight boggy feeling to the finger ; a second irregular enlargement, the size of a hen's egg, was also felt to the left of the uterus ; an attempt at movement of the uterus gave her great pain ; the left ovary was slightly enlarged, while the right could not be mapped out, examination causing her considerable pain as it was. The examination by the vagina was supplemented by that through the rectum, thus rendering the diagnosis more positive.

The diagnosis of double pyosalpinx, the result evidently of puerperal septic infection, was made.

Naturally the first conclusion to arrive at from such a condition of affairs, was an immediate abdominal section and, at that time, ablation of both tubes and ovaries. Having due regard to the rapid evolution in surgical gynæcology within the past three years, how-

* Read before the New York State Medical Society, February 5, 1895.

ever, such a condition would, in the hands of many operators, at present warrant total extirpation of the uterus with its annexa.

The patient as well as her husband intrenched themselves against immediate surgical interference; the operation was therefore held in abeyance until such indications as might possibly make such performance imperative.

The plan of treatment then followed out consisted of giving vaginal douches of three quarts of hot water three times a day, to get its secondary or restful effect and thus reducing the hyperæmia; sulphate of magnesia, a drachm to the ounce of water, night and morning to produce watery stools; turpentine stupes applied to the abdomen.

Almost from the day of her confinement, I was informed, the patient had been taking daily on an average, about one grain of morphine in divided doses, as prescribed by her physician, which, though quieting the pain gave her but little sleep, wakefulness and restlessness generally attending its use; obstinate constipation and considerable tympanites also accompanied the continued use of the morphine. I stopped the latter on the third day, replacing it with teaspoonful doses of bromidia when required, the lancinating and throbbing pains having been somewhat diminished by the douches and stupes; the temperature was also reduced to 99.4° F. on the fourth day.

May 10th, she had but slight pain and rested better. There seemed little if any diminution in the inflammatory enlargement upon examination, although there was less tenderness. The next day, May 11th, I was called in haste, the patient stating she had felt a sudden sharp pain on her right side, followed shortly thereafter by a sudden gush from the vagina of a yellow liquid, evidently purulent in character. Digital examination showed there had been a complete collapse of the mass on the right side, the *cul-de-sac* fairly free of any enlargement and the resistance and sense of fullness in the vagina considerably diminished. Upon examination with the speculum, a decidedly purulent liquid could be seen oozing from the uterus, which was increased by pressure made to the vault of the vagina on the affected side by means of a pledget of cotton held in dressing forceps.

This was an entirely unlooked-for and happy termination in part, of what had actually been a dangerous condition of the patient; it was by far, the unexpected that turned up. The enlargement on the left side still remained, however; yet not for long, for two days following, May 13th, a result similar to the above occurred with equally

favorable conditions immediately following, the temperature falling next day to 98·8° F. That such a happy result was possible, though extremely improbable, I had previously been aware of from reports in gynæcological literature of several cases of tubal contents of various character evacuating through the uterus.

From this time on, the patient's condition gradually improved; the uterus became more and more movable, the inflammatory exudates about the tubes and broad ligaments less evident; the adhesions less firm and sensitive; the need for abdominal section had passed decidedly and her condition was one favorable toward a final recovery, the probability of adhesions remaining, however, for an indefinite time.

June 17th, she went out for a drive, the first time she had been out since her confinement four months previously.

June 24th, she still complained of aching pain, but on the right side only and limited in area; digital examination indicated some thickening and tenderness along both tubes, the right in particular.

At this time there arose in my mind the possibility of permanent benefit to the tubal condition, through a thorough curettage of the uterus and iodoform-gauze drainage. Unfortunately, I could not obtain her consent to undergo such operation until March, 1893.

In the meantime, on October 31, 1891, the patient had developed a mild pelvic inflammation attended with greater tenderness on her left side, this about the time of her menstruation.

Again in January, 1893, she suffered from an attack of what I deemed a catarrhal appendicitis.

The result of the subsequent curettage was decidedly favorable. The muco-purulent discharge which, previous to the curettage had been more or less continuous, rapidly subsided, while the inflammatory condition and induration diminished with almost equal rapidity. Her menstruation, though profuse immediately following the operation, was attended by no pain. Her sufferings had been added to by the presence of anal fissures, which condition at the time of the curettage was overcome by digital divulsion of the sphincter. Convalescence was retarded by an intercurrent colitis, the result of fæcal impaction through an overgenerous diet of kouniss and a naturally constipated habit.

Six weeks subsequent to the operation, examination developed but slight tenderness upon the right side, absolutely none on her left. For the first time in almost four years, she informed me, she was entirely free from pelvic pain.

November 9th, uterus anteverted, cervix drawn back, with evident adhesions to the bowel, since defecation was generally painful; some tenderness upon firm pressure only, on either side of the uterus; a yellow leucorrhœal discharge was also present.

I saw the patient next April 16, 1894; said she had not menstruated since February 12th, the flow then being scant. She wondered if such a thing were possible that she could be pregnant, describing symptoms natural to such a condition. From the foregoing history, I strongly doubted such a probability; yet, upon examination, I was surprised to find two things: enlargement of the right tube as well as the uterus, the latter being drawn up some in the pelvis. There was evident pregnancy, but there was some uncertainty as to its being either normal or tubal. Naturally I was surprised in any event. I requested her to call upon me again in a month's time, which she did on May 7th; has not menstruated in three months. I found the uterus had enlarged considerably since the April visit, while there had been no apparent increase in the size of the tube. The diagnosis was therefore evident, the tubal condition being an intercurrent return of her original condition. Why this should be so I was at a loss to understand, since the left tube and ovary were seemingly normal. Throughout her pregnant state the patient was not devoid of pain, her tubal condition, as well as adhesions, and returning attacks of colitis, causing her considerable suffering at times.

I must admit, in anticipating her coming confinement, that I was anxious as to the possible dangers or complications attending or arising.

From July to October she spent in the invigorating climate of the Thousand Islands, her physical condition being thereby greatly favored. Strange to say the first sensation of quickening was felt as late as August 1st, fully five and one half months subsequent to her last menstruation, a rather uncommon occurrence.

December 2d, the patient states that several days ago she felt a sharp pain in the right iliac region, accompanied shortly thereafter by a yellow discharge from the vagina, somewhat similar in character to that of several years previously.

December 4th, labor pains set in; head presentation; dilatation progressed very slowly, due to the fact that the pains, instead of being in the axis of the cervical canal, spent itself upon the anterior lower uterine wall. After sixteen hours, uterine inertia rapidly intervening, and dilatation being somewhat larger than the size of a silver dollar,

delivery of the head was hastened, under chloroform, by the use of high forceps. After taking off the forceps and endeavoring to deliver the shoulders I found, as the cause of the cyanosis accompanying, the cord wound tightly about the neck; the tension on the cord was so great that the latter gave a distinct snapping sound after it was lifted over the head. Following this, delivery was rapid and uninteresting. No complications were subsequently met with. There was but a slight unilateral cervical laceration, as also some of the perinæum.

The fact that pathologists have taught us that the ciliated epithelium of the tubes is entirely destroyed without hope of regeneration, and that sterility is the result consequent upon suppurative invasion of both tubes—anything tending to disprove this being a mistake in diagnosis, it may be presumed by many, of the probability of a faulty observation in this instance as regards the diagnosis. Such a statement may be qualified however, in that in a chronic inflammation of the tubes, the epithelium is more apt to be destroyed than in the recently acute form; in the former, the function of the tube is positively crippled.

As to the cause which led to the sudden permeability of the occluded ends of the tubes, I do not profess to enter into. We know that the proximal end of the tube is more easily permeable than the fimbriated end, the latter being more intimately associated with the delicate peritonæum, throwing out lymph and causing occlusion of that end.

As to which tube and ovary was the means in part, of her conceiving, I am not in a position to state; though from the fact that six weeks subsequent to the curettage, and up to and during her pregnancy, the left tube and ovary were apparently in a normal condition, while the right was the cause of frequent pain, if not suffering, I am inclined to believe that the left tube and ovary were the favored ones.

The question may arise, also, as to the probability of an existing pyometra, in either an ordinary or bicornate uterus; or a tubo-ovarian abscess or a hydrosalpinx on one side, accompanied by a pyosalpinx on the other. The history of the case will however, no doubt bear me out in the diagnosis made, as differentiated from the possibilities mentioned.

It may occur to some to arraign my judgment, in not insisting, unreservedly, upon an abdominal section, when called early to the case. I can only say that, aside from the patient's objection, what deterred me from insisting upon an immediate operation was a desire to await developments for a few days, since the patient's physical con-

dition had suffered but little, aside from the pain it had caused her. Then too, I detected a slight improvement in the patient's condition from day to day, evidently due to the effects of the hot water, in that the acute symptoms had gradually lessened and therefore no immediate danger of possible rupture was entertained.

I trust I may be liberally understood: that, though an operation may be seemingly imperative yet, it may not, at times, be unwise to accept of temporary delay, being sensible of every indication presenting. The foregoing history furnishes a striking instance of this.

It is, therefore, with a consciousness, mingled with both satisfaction and pleasure, that I am in a position to throw such a vivid picture upon the screen, of the possibilities entering into ordinary life and the strangely mixed scenes of human existence.

A CASE OF VENTRO-FIXATION OF THE UTERUS
FOLLOWED BY PREGNANCY, ILLUSTRATING
THE VALUE OF CONSERVATIVE OVA-
RIAN SURGERY.*

BY FRANK W. TALLEY, M. D.,
Instructor in Gynæcology, Philadelphia Polyclinic.

I venture to report the following case of ventro-fixation, as it beautifully illustrates the value of leaving ovarian tissue if possible:

Mary A., aged twenty-five years; dressmaker; primipara; puberty at sixteen; menses always were irregular, at times not occurring for several months; scanty; flow lasts four or five days; suffers severely from dysmenorrhœa.

Four years ago she gave birth to a child at full term. The labor was comparatively easy. On the ninth day after her labor she got up, and going out, the day being damp, contracted a cold. She was then sick for six months with chills, fever, and great tenderness and pain in the abdomen. Five months after her labor she says an abscess pointed in her right side and was opened. The opening discharged for more than a year and then closed. A scar remains in the right iliac region near the inner margin of the right anterior inferior spine of the ilium.

* Read before the Philadelphia Obstetrical Society, February 7, 1895.

She complains now of leucorrhœa and constant pain in the small of the back and sides, from which she has suffered since the birth of her child.

Examination: Perinæum good; uterus large, retroflexed and drawn to the right side, firmly fixed in its false position; left ovary large, tender, prolapsed and also fixed.

On the 24th of April, 1894, she entered the Polyclinic Hospital, and two days later the abdomen was opened by a median incision. The fundus of the uterus was freed from its adhesions posteriorly. The right broad ligament was represented by a thick indurated band of fibrous connective tissue in which no evidence of tube or ovary were to be found. Evidently the abscess which had pointed in her left side had been a tubo-ovarian abscess, which had burrowed between the layers of the broad ligament and through the walls of the abdomen pointing in the right iliac region. During the long suppuration, the sinus having discharged for more than a year, the tube and ovary had lost their identity in the organized cellular infiltrate about them.

This fibrous band was divided near the uterus between two ligatures. The left ovary, which was prolapsed and adherent, was then freed. The tube was apparently patulous. During the separation of the ovary from its adhesions a blood cyst was ruptured and there was considerable hæmorrhage from the ovarian stroma. To control this a portion of the ovary corresponding to the injured part was resected and its capsule stitched with fine silk suture. The uterus was then brought forward and the fixation made. The fundus was supported behind the pubic symphysis by the finger of the assistant. A fine silk stitch was then passed in the lower end of the incision through the posterior half of the abdominal wall, including a few fibers of the rectus muscle, the posterior lamella of the sheath of the rectus, sub-peritoneal fat and peritonæum on the one side, passing through the fundus of the uterus, from side to side, just posterior to a line drawn between the tubal attachments and through the posterior half of the abdominal wall on the other side. A similar stitch was passed half an inch higher up in the abdominal wall and half an inch farther back in the posterior surface of the uterus. These stitches on being tied retained the uterus in anteversion. The remainder of the abdominal incision was closed in the usual manner. The patient made a good recovery and was dismissed from the hospital three weeks after her operation.

December 22d the patient returned, stating that she believed herself to be pregnant. Vaginal examination showed the uterus some-

what enlarged, softened and anteflexed. The fixation to the abdominal wall was not rigid, and the uterus was allowed considerable latitude of movement. An examination of the breasts confirmed the uterine symptoms of pregnancy.

January 17, 1895, the signs of pregnancy were again corroborated.

The case is interesting from two points of view: First, as teaching the importance of conservatism in dealing with the ovary; and second as a case of ventro-fixation followed by pregnancy a few months after the operation.

REPORT OF AN OPERATION PERFORMED FOR ECTOPIC PREGNANCY DURING THE TENTH MONTH.

BY A. H. HALBERSTADT, M. D., POTTSVILLE, PA.

I was called to see Mrs. G. on December 27, 1894, who was supposed to be in normal labor at the full time. The pains had been in progress for about twenty-four hours, and her physician had been unable to reach the child *per vaginam*. I found an abdominal pregnancy. The patient had borne five previous children, the youngest being three years of age. During the early portion of this pregnancy it was thought by a medical attendant that she had a fibroid tumor in the right half of the pelvis, the existence of pregnancy not being recognized until quickening occurred. When I saw her the pains were so intense that I advised morphine hypodermically, in half-grain doses, until relief from pain should be obtained. On the following day I found her without pain, cheerful, and willing that anything should be done to save her life. The fœtal heart could not then be heard and the mother thought the child had died that day. For two days afterward she appeared to be very well, and the nights were spent very comfortably under the influence of three eighths of a grain of morphine. On the third day she was so well that I discontinued my visits until a change in her condition should occur. If worse, I proposed to at once remove the child.

The following day I was summoned and found the woman in collapse, pulse 150, extremities cold, vomiting dark blood. I immediately proceeded to operate with the belief that I would thus give the woman the only chance of escaping death. After etherization, an incision

about six inches long was made from the umbilicus downward through the linea alba

On cutting through the peritonæum, the foetal surface of the placenta appeared through the membranes. On gentle manipulation, my finger passed into the cyst and liquor amnii escaped. I now introduced a trocar and drew off, first, the liquor amnii and, following it, about one gallon of dark blood that was contained within the cyst cavity. I then tore the membrane and extracted a well-formed and fully developed female child of about ten pounds weight.

The degenerate placenta was already detached to one half of its extent and bled freely at first, though the hæmorrhage was easily controlled by flushing the cavity with hot water. As the placenta hung loosely, I tore off the half, and under the influence of water as hot as my hand would bear but little blood escaped. The placenta had attachments extending from the right iliac crest to the linea alba and into the right half of the pelvis. Iodoform gauze was packed in the cavity and the womb closed around it.

Injections of whisky were given by the hypodermic syringe with no effect. She died without coming from under the influence of the ether. Death was due to the hæmorrhage prior to the operation, for the amount was not great during the removal of the child and placenta. The ether no doubt had its depressing influence also. No post-mortem examination was made.

THE BEST METHOD OF THE STERILIZATION OF CATGUT.*

BY ARCHIBALD McLAREN, ST. PAUL, MINN.

Is catgut as ordinarily prepared as perfect for ligature and suture material, as safe and convenient for the surgeon, as it can be made? I think not; clinical experience has led the great majority of surgeons to at least use it with care. The editor of the *Therapeutic Gazette* in discussing antiseptics says: "With the advent of Listerism began the reign of catgut as an absorbable ligature material. Of late years this material has fallen under suspicion; it is shown that the commoner preparations of this material expose it to the danger of infection; that

* Read before the Philadelphia Obstetrical Society, February 7, 1895.

the ordinary methods of sterilizing it do not always succeed in destroying the germs lying in the central portions of the thickest strands of gut." An absorbable ligature and suture material is of course the ideal one, provided it can be rendered absolutely clean. The ordinary methods of preparation of catgut are, first, to soak the catgut for several weeks in oil of juniper, then for months in absolute alcohol, and finally a few days in a 1-1,000 solution of bichloride of mercury and alcohol; too long a time in this last solution weakens the catgut. A much better method, it seems to me, is the sterilization of catgut in boiling alcohol, although the temperature of boiling alcohol is only 170° F. Hodenpyl's experiments lead him to believe that boiling alcohol has some chemical antiseptic properties which help to destroy septic germs. Hodenpyl's experiments are quoted by Fowler in the *Brooklyn Medical Journal*. He placed fragments of catgut in bouillon culture of the streptococcus pyogenes, staphylococcus pyogenes aureus, bacilli and spores of anthrax; after thorough infection the catgut was boiled in strong alcohol, then dried and placed in culture media. After fifteen minutes boiling, asepsis was incomplete; thirty minutes rendered the specimens sterile except in the case of anthrax; in one hour asepsis was absolute.

Later investigators have questioned the correctness of Hodenpyl's experiments, believing that boiling alcohol does not always render the larger strands of catgut absolutely clean. Bacteriologically we know that a dry temperature of 284° for four hours is necessary to kill anthrax spores. To increase the temperature of boiling alcohol, it has been suggested to boil it under pressure, but the difficulty of preventing a leak in the apparatus, of regulating the pressure and consequently the temperature (because alcohol under a pressure of 200° or 212° F. weakens catgut in a very short time), as well as the danger of explosion, has led Fowler in the *Medical Record* of December 3, 1893, to the following conclusion: That boiling at atmospheric pressure at a fixed temperature seems still the best and most reliable method.

The dry sterilization of catgut was first used by Prof. Reverdin, of Geneva, August, 1888 (*Revue médicale de Suisse Rom.*). Bacteriological experiments, as well as eighteen months' clinical experience with catgut sterilized at a temperature of 284° for four hours, had in his experience proved perfectly satisfactory. His method of preservation of the catgut after sterilization was to place it in oil of juniper and then in absolute alcohol. Later Brunner (January, 1890, *Münchener med. Wochenschrift*) experimented with the dry sterilization

of catgut, and his conclusions were that dry heat at a temperature of 266° F. rendered catgut sterile but too brittle for use. The most practical method for the dry sterilization of catgut was first described by Dr. Boeckmann, of St. Paul, in the *Northwestern Lancet* of February 1, 1894. Both Dr. Boeckmann as well as my associate, Dr. Dewitt, carried out a long series of bacteriological experiments to prove that infected catgut could be perfectly sterilized by dry heat, gradually raising the temperature in the sterilizer to 284° and keeping it at that temperature for four hours; this temperature will, of course, kill all pus germs as well as spores of anthrax, which are often found in the intestines of sheep, from which catgut is manufactured.

To prevent the catgut becoming too brittle, which has been the objection to this method of preparation, only the very best catgut, for example banjo strings, were used. A coil about three feet in length is first wrapped in oiled or waxed paper to prevent the intense heat drying the catgut too much. After wrapping in waxed paper it is sealed in small envelopes so gummed that they can be closely sealed. They are then ready for the sterilizer. Catgut prepared in this way is rendered absolutely sterile in the larger as well as the smaller strands. It is very doubtful in my mind, as I have before said, whether the central portions of the larger sizes of catgut are rendered perfectly sterile after the boiling process. Again this method is more convenient for the keeping and especially for the carrying of catgut. A few of these small envelopes, containing different sizes of catgut, can be carried in the surgeon's pocketbook for use in cases of emergency. Although the outside of the envelope does not remain clean, the inside wrapper does, so that the nurse or some one not engaged in the operation can tear off the end of the envelope and either drop the inside wrapper with the catgut into alcohol or allow the surgeon to take it out of the envelope without soiling his hands.

Catgut preserved in any liquid is always troublesome to carry and difficult to keep clean. For the past ten or twelve months several surgeons in St. Paul besides myself have been using catgut, prepared in this manner, for everything with the greatest satisfaction; large strands for pedicle ligatures, smaller strands for ordinary ligature and suture material. Catgut prepared in this way is very strong; the larger strands can not be broken in tying the first knot; it is a little stiff and should therefore be moistened in sterilized water for a moment before using. It is economical and can be easily prepared by the surgeon or his nurse. The ordinary dry sterilizer used in the bacteriological laboratories can be used for the dry sterilization of

catgut. I think the best results, however, can be obtained by using the sterilizer and catgut box devised by Dr. Boeckmann and described in the *Northwestern Lancet* about eighteen months ago. A sterilizer is becoming more important to the operator every day; the Arnold and the Van Heusen are simply steam or wet sterilizers, while Dr. Boeckmann's instrument combines both steam and dry sterilization; steam being forced through the contents of the sterilizer by simply inserting a cork in the top, while if the cork be left out steam escapes at the top and dry hot air passes from below, through the sterilizing chamber.

I believe one reason why we hear so much to-day of vaginal hysterectomy for pelvic suppuration is on account of the use of silk ligatures after the removal of pyosalpinx; the silk, although clean when it leaves the instrument tray, becomes at times infected from the pus tube, remaining as a foreign body and a constant source of irritation in the pelvis. We all know the protracted recovery which follows the gauze packing after laparotomy for pelvic suppuration, and that a sinus will exist for months or until the last silk ligature has come away. Two cases of pelvic abscess have come to my knowledge during the past year where a second laparotomy was necessary, one and two years after the original operation, to open the abscess cavity in which the silk pedicle ligature was found as the cause of irritation.

ACTION OF QUININE UPON THE INTERNAL GENITAL ORGANS DURING PREGNANCY AND MENSTRUATION.*

BY GEORGE COROMILAS, M. D., CALAMATA, GREECE.

Corresponding Fellow of the Obstetrical and Gynæcological Society of Paris.

Petitjean was the first who wrote in 1845 that he had so often seen abortion produced during the administration of quinine for intermittent fever, and Rodriguez the first also who denied Petitjean's assertion.

Ten years had passed (in 1855) when Dr. John S. Wilson described the uterine action produced by quinine; in 1860 Dr. J. H. Rich reported several cases of alarming uterine hæmorrhage speedily

* Read before the Philadelphia Obstetrical Society, February 7, 1895.

checked by its means. General attention had not been attracted to this subject until the appearance of an elaborate article by Monteverdi (1871), who concluded that quinine might be given with prudence to pregnant women, and that it is a trustworthy ecboic and preferable to ergot. This paper provoked expressions of opinion from physicians everywhere, especially from those who practiced in malarious districts. They divided into two parties: those who received the opinion of Petitjean, Wilson, Rich, Monteverdi, and those who absolutely denied that quinine has the property of stimulating uterine muscular fibers—viz., the adherents of Rodriguez' opinion. As neither party has persuaded the other, there still exists a doubt in regard to this action of quinine.

For this one reason I dared to present before the *London Obstetrical Society* an account of three cases—all I could collect in my own country—and a fourth in which the quinine produced hæmorrhage, hoping thereby that the Fellows of this Society may have their attention attracted to this subject.

Before entering into the details of my observations, let me say that the most part of the inhabitants of Tergestures—Messina and Laconia—have an intense prejudice against the use of *quinine* during pregnancy and menstruation.

CASE I.—Mrs. V., of Tylos, thirty years old, multipara, was eight months pregnant.

December, 1888, she came to consult me, telling me that she had intermittent fever a long time ago.

Present State.—Delicate, anæmic, nervous; liver a little hyperæmic, spleen hypertrophic, tongue a little saburral. I determined the diagnosis of an intermittent fever and gave twenty-four grains of valerianate of quinine in ten doses; ordered her to take one every half hour.

After the third dose I renewed my visit and I found the patient having pains in the renal and hypogastric regions and all the symptoms of a labor. I prescribed some narcotics, but the patient changed doctors and I could not learn the result.

CASE II.—Widow G., of Calamata, Greece; aged thirty years; was six months pregnant from a clandestine marriage; multipara, delicate, nervous. She had no other abortion nor premature accouchement while living with her husband. She used all empirical means possible to provoke an abortion but all was ineffective.

February, 1894.—They called me to see her, whom I found was attacked by influenza. It was accompanied by double broncho-pneu-

monia. I cured the patient in fifteen days without ordering *quinine*; when she was convalescent I took occasion to prescribe *salicylate of quinine*.

20th.—I prescribed twenty-four grains of *salicylate of quinine* in ten packets, to take one every hour. After the third dose I returned and I found the patient was in labor, the pains being regular and seemingly natural. I desired to supplement the other medicines and ordered opium or morphine, but without effect; she desired the premature accouchement and hid the remaining packets of quinine, in order to take them if the premature accouchement did not take place with the first three.

21st.—The patient was delivered last night.

CASE III.—Mrs. A., of Calamata, Greece; aged twenty-five; had had two children at full term.

They called me to her and said that the patient was delicate, nervous, having no special predisposition to abortion nor premature accouchement.

April 8, 1894.—She was pregnant four months for the third time.

There was slight pyrexia, but no physical signs of disease were detected.

9th.—Early in the morning she took twenty grains of sulphate of quinine, in one hour. After the last dose she felt hard pains which produced the abortion.

I have very often administered eight grains of quinine to pregnant women, in three packets, with the recommendation to take one every half hour, or every hour, and if they feel a pain after the first or second dose not to take the others; otherwise to take all. Some pregnant women have felt nothing and I increased the dose the next day; others who have felt pains I have cured with other antipyretics and antiseptics.

Also I observed, in the administration of quinine during the menstruation, sometimes the stoppage of the blood and very often its diminution.

CONCLUSION.

From my experience till now I conclude that quinine has a certain oxytoxic action, produced by uterine contraction.

That the women who are anæmic, nervous and debilitated have a predisposition more than others.

We should never prescribe quinine during pregnancy and menstruation, in large doses, without associating it with one or other nar-

cotic medicine unless there exist an evident contra-indication, or when we do not know the predisposition.

CASE IV.—Miss El., Sp., of Arcoch, Calamata, Greece; twenty-three years of age, having had her menstruation regularly till April, 1893.

Five years ago she suffered with hæmoglobinuria (from quinine) and since then had not taken quinine.

One of her uncles died in 1893 of hæmoglobinuria from quinine.

April, 1893.—Dr. Oconomopoulos had prescribed for her some pills of iron and quinine. She used them a few days after her last menstruation and the flow came back, whitish, irregular, with pains in the renal and hypogastric regions, and lasted twelve days. It was the first time she had those symptoms. Six days after this hæmorrhage stopped, she began again to take the same pills, and the flow returned. Therefore her parents called Dr. Alvanakes, who does not believe that quinine has an action on the uterus, and prescribed a bitter drug which increased the pains and hæmorrhage. Changed this doctor and called me when I found the patient in the following state :

Pale, debilitated, anæmic, pulse slow, strong pains in renal and hypogastric regions; the percussion in the hypogastric region reveals an insignificant dullness; and I observed an alarming uterine hæmorrhage that was checked by using antipyrine, four grammes in one day.

Afterward, for three months, her menstruation came back every twenty-seven to twenty-nine days, abundant, with six to seven days' duration, and later, till April 8, 1894, was very regular in quantity, quality and duration.

April 8, 1894.—She had had her menstruation, when by order of her ordinary doctor she used *cinchona wine*.

18th.—Menstruation again with pains and duration till 22d. Stopped after abstention from *cinchona wine*.

25th.—She called me in. By palpation and pressure she felt a little pain in the left ovary's region.

26th.—I ordered citrate of iron, 2 grammes; sulphate of quinine, 1 gramme; water, 100 grammes; to take every day two or three teaspoonfuls, viz. one after each meal, in old brandy or in wine.

27th, *A. M.*—I asked if she took it and she answered me that she was afraid to drink this medicine; on my recommendation she decided to take a teaspoonful after dinner and another after supper.

28th, *A. M.*—A teaspoonful after breakfast and another after dinner.

P. M.—She feels pain in renal and hypogastric regions. I stopped it.

29th, A. M.—A teaspoonful after breakfast and another after dinner.

30th, A. M.—A teaspoonful after breakfast and after dinner and a tablespoonful after supper.

May 1st.—She feels strong pains. I stopped it.

3d.—I make her drink again some teaspoonfuls.

4th.—She departed for the country with the recommendation to take this medicine; a teaspoonful after breakfast and after dinner and a tablespoonful after supper.

6th.—I received this letter:

“SIR: I have promised you to take account of every symptom which I could observe; according to my promise, I tell you that the day following my arrival here, my menstruation came back with so much pain that I could not find relief.”

I then prescribed antipyrine three grammes in ten packets, with the order to take each, the first five every half hour, and the others every hour, and to stop all other medicine.

Second Letter, May 7th, Morning.

“When I began to take the packets which you sent me yesterday the hæmorrhage diminished sensibly, but the pains are nearly the same.”

3 P. M.—A man told me that the patient having need to go to the water-closet, the hæmorrhage recurred and she fell to the ground from dizziness.

I prescribed ergotin, ether, cognac.

8th.—I received this letter:

“It is the fourth day to-day and the hæmorrhage exists yet, but very little.”

10th.—The flow stopped.

August 22d.—She came to see me and said:

“A month ago my country doctor prescribed a little dose of quinine, and I took half; after one hour I felt renal and hypogastric pains, after two hours I saw some drops of blood on my drawers, and my urine became a little dark.”

She complains of a little pain in the renal region; examining the hypogastrium by palpation and pressure I can not find any lesion.

I administer *sulphate of quinine* 0.40 in three packets, to take one every half hour.

P. M.—More renal pain than in the morning.

They permitted me, for the first time, to examine the vagina, with my little finger.

Hymen intact, I felt external os uteri pointed and no other lesion.

23d.—She is better, saw some drops of blood on her drawers. It is fifteen days since she has had her menstruation. They do not permit me to examine thoroughly for the second time, by vagina, to affirm if some lesions exist or not in the uterus.

THE HISTORY OF A CASE OF FREQUENT MICTURITION.

BY WALTER LESTER CARR, M. D.,

Instructor in Diseases of Children, Post-Graduate Medical School and Hospital,
New York.

A text with many headings is not advisable, as a fundamental truth may be weighed down by subdivisions of the subject. In medicine, however, we sometimes have a patient who has a train of symptoms, due to a variety of causes, all of which must be studied before the proper treatment can be determined. When we examine a patient, we should remember that the various organs are interdependent, and not independent of one another.

The following history will show in brief what symptoms were present in a boy who was brought to me for the cause of frequent urination:

“L. W., aged seven years. *Family History*.—Mother emotional and excitable, but in good health; father healthy and rather phlegmatic.

“*Previous History*.—The boy is said to have had ‘meningeal inflammation’ when three years old, but this is very uncertain, as nothing definite can be told regarding his condition at that time. He has had scarlet fever, measles and pertussis. He had pneumonia at the age of eight months, and again when five years old. He was circumcised one year ago for nervousness and too frequent urination. No history whatever of rheumatism or growing pains.

"Present History.—The boy's mother states that he has a constant desire to urinate, and that this is just the same day and night, though he does not wet the bed or his clothes. She thinks he sleeps quite well after nine o'clock, but the child says he dreams a great deal. The mother considers him nervous, and allows him his own way in sleeping and eating. His appetite is capricious, and his bowels are not always regular. The boy has choreic movements of the left shoulder, and twitching of the nostrils. His skin is yellow, his tongue is coated white on the tip, thick and yellow toward the base. The mucous membrane of the nose and pharynx is tender and is covered with a free muco-purulent secretion. The tonsils are slightly enlarged. The heart is normal. There is bronchitis of the large tubes. The expansion of the lungs is good and there are no fine râles. The abdomen is not distended or tender; the liver and spleen are normal. Circumcision has left the prepuce barely covering the corona. The meatus has an opening at its superior part just large enough to admit of the introduction of a small probe. The meatus appears of normal size, but is overlaid by a fold of membrane that extends across it, except for the space mentioned.

"A cocaine solution was applied, and the adhesion was broken down, after which the lips of the meatus are seen to be reddened and the urethral canal congested. The urethra allows the passage of a No. 8 English catheter. The bladder is not distended. An examination of the urine shows the presence of a large quantity of uric acid."

The primary condition for which this boy came to me was the frequent urination. Nervousness, twitching, gastric derangement and bronchitis were not regarded as sufficiently serious to need treatment.

The question would naturally arise, what relief would be afforded by breaking down the membranous obstruction at the urethral opening. In answer it may be said that although it was one cause of frequent urination, there were other factors that increased the irritability of the bladder, as a brief consideration of the history will show. These were, first, the undue acidity of the urine, dependent upon the boy's faulty digestion; and second, the irritability of the nervous system, some of which was caused by improper nutrition.

There was no doubt as to the character of the chorea, although no definite history was attainable. The bronchitis and nasal irritation were sufficient to produce muscular twitching in a boy whose nerve centers were not strong enough to inhibit peripheral impressions.

Treatment.—The boy's mother was informed as to the necessity of regular hours for sleep and exercise. Positive rules were laid down that the meals should be taken at stated times. All sweets, pastry and fancy dishes were prohibited. The heartiest meal was to be in the middle of the day, with a light supper at night, and without any eating between meals. The boy was ordered to be in the open air every day for three or four hours, but not without oversight, lest he increase rather than lessen his nervousness.

Rhubarb and soda mixture was given for its direct effect on the gastro-enteric tract, and for the indirect relief it would afford to the urinary organs by lessening the acidity of the urine. The mucous membrane of the nose and throat was ordered treated with a weak solution of boric acid, and the bronchitis by friction and stimulation of the chest.

When I saw the boy three days later, I found him decidedly improved. He passed his urine less often, and he was not so nervous as at the first examination. Soon after this, however, he had a sharp attack of bronchitis, which necessitated his remaining in the house a number of days. Since that time he has made steady improvement, under hygienic and dietetic management, with very little medicinal treatment.

This case was not a complex one, but we may review some of the symptoms that were most prominent.

The frequent urination we can ascribe, first, to the contraction at the meatus; second, to the acid urine; third, to the deranged digestion, which caused more or less distention of the intestine and pressure against the bladder; and, fourth, to disturbed innervation, the last being dependent upon the general imperfect nutrition of the nerve centers.

The first cause was easily removed; the second, that of the hyper-acid urine, was relieved by attention to the diet with mild medicinal treatment; the third, the distended intestine, was remedied by a change in diet and medication; the fourth, that of disturbed innervation, which was the important factor in the boy's constitutional condition, began to improve with the dietetic and hygienic management.

The muscular twitching seemed dependent upon local irritation of the mucous membrane, due to a naso-pharyngeal catarrh; to bronchitis which followed pneumonia; and to imperfect inhibition, because the nerve centers were badly nourished and their blood supply deficient.

The local treatment of the naso-pharyngeal tract with stimulation

of the cutaneous surface afforded relief, which was augmented as soon as the child's diet and exercise had been under supervision for a short time.

The nervousness was caused almost entirely by the irregular meals and the disturbed condition of the brain cells, which were both poorly nourished and overstimulated.

For a short time bromide solutions were used to establish a natural habit of sleep; but after exercise in the open air had been prolonged and the boy's nutrition began to improve with the changed dietary, the medicine was discontinued.

The gastric derangement has been mentioned so often in connection with the treatment of the nervous symptoms, that I shall just refer to it. The boy's appetite was capricious, because he was allowed to eat at any time he pleased and anything he fancied, and, as was natural, he had a superabundance of sweets and indigestible articles, in preference to those which he needed for the maintenance of his tissues. The result was that he had the discomforts of poor digestion, and suffered from defective nutrition, though it was not positive that he was distinctly anæmic.

The treatment here was not only of a direct benefit to the digestive organs, but increased the boy's strength. The diet was given careful attention, and only enough medicine used to relieve uncomfortable symptoms.

This case is narrated, not because it is remarkable or unusual, but merely to call attention to what seemed to be slight ailments, the symptoms not always being prominent. The result of dietetic and hygienic treatment was the best indication that we had reached the ætiological factors which produced the various nervous disturbances in a child whose resistance was lessened by his inheritance and conditions of life.

6 EAST FIFTY-EIGHTH STREET.

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EDITORIAL.

ANNOUNCEMENT.

We call especial attention to our Abstract Department. This portion of a journal is generally the repository for "clippings" and "padding;" but it shall be our constant endeavor to raise its standard, until it shall be second in importance and interest to no other department in this JOURNAL. In it will be found full abstracts of the transactions of important societies in this country, of which we have not the exclusive publication; short *résumés* or, more properly speaking, reviews of the *status* of gynæcology abroad, of obstetrics and of pædiatrics. The scope of these shall be gradually enlarged, until they shall present each month a complete synopsis of the most important work, connected with these specialties, published in every country. This department is in the hands of an able and enthusiastic *corps* of assistants peculiarly fitted, by special training and linguistic ability, for the particular branch of which each has charge.

We would welcome *correspondence* on any important or interesting topic, either personal or otherwise, connected with any of the subjects to which this JOURNAL is devoted. We call our readers' attention to the prominent position of our Correspondence Department, which immediately follows the Editorial, and to the fact that we present such contributors with the same number of reprints, if desired, as we do those who contribute original articles.

A DEARTH OF AMERICAN OBSTETRICIANS.

It is a decided anomaly as well as a paradox that almost all obstetricians in this country are either general practitioners of medicine or gynæcologists; at least these are the names they seem anxious to be called by. If a man has surgical knowledge, or is ambitious in that direction, and has, in addition, a well-deserved reputation for obstetric experience, he submits to his reputation but calls himself a gynæcologist. Another, if he be willing to acknowledge no special training or capacity in practical surgery—and few indeed there are of these—will pose as a general practitioner and rely on consultation for operative assistance. But none of them will call themselves that which they are in fact—specialists in a science which their large experience, hard work and accepted writings prove they know most about. Why this is so we are at a loss to explain; and moreover we do not like it. It smacks somewhat of a hypostatic union of doctor and undertaker. For, as we have had occasion more than once to point out, obstetrics is a science of such far-reaching effect in relation to other branches of medicine that, if a man puts his best efforts into this, he must be prolific indeed if he have time or energy for the mastery and practice of any other; while so great and dependent is the relation between gynæcology and this science that, when the latter has reached a position of usefulness commensurate with its aim and scope, the gynæcological *specialist* must break his tools and seek another trade. Therefore, as we suggested in our reference to the combined personality of doctor and undertaker, an obstetrician who practices as a gynæcologist would seem to *sow* in the one specialty and to *reap* in the other. To gynæcology does obstetrics owe, in great measure, its marked advancement in the past twenty years. To a gynæcologist does it owe the axiom: "When the child's head fails to recede after a pain, apply the forceps." Owing to the general adoption of this advice not only have many lives, both of mother and child, been saved, but vesico-vaginal fistula, once the commonest sequela of labor, is now almost a *rara avis* in gynæcological hospitals. To a gynæcologist is also due much of the successful treatment in the prophylaxis of abortion and in its arrest when threatened. This specialty, indeed, has been as a mirror of truth to the obstetrician, and the latter has not failed to profit by what he has seen therein. It would not be surprising, then, if he studied gynæcology for the better understanding of his own specialty; but this does not seem to

be the reason why. For, however well equipped he may be in his special knowledge, he does not claim to be an obstetrician practicing in the light of gynæcology ; rather is he a gynæcologist who practices obstetrics as a side-branch. Does not this present the spectacle of "the horse riding inside the cart" ?

An obstetrician should undoubtedly know gynæcology. If he would advance he must study his own science by reflected light ; but he should not practice both specialties. Where he gains in one, he will lose in the other ; for it is a clever man who is complete master of *one* trade. Indeed, we are inclined to think that, in adopting the practice of gynæcology, an obstetrician rather interferes with his usefulness as a practical obstetrician. He is apt to become prejudiced by his new training. A gynæcologist is accustomed to repair the *results* of obstetrical mistakes ; he goes to Nature's assistance after she has completed her immediate efforts at repair and is quiescent—when she is "stalled," as it were, and is waiting for assistance. And if he attempts with equal assurance, as he is apt to do, to apply these same methods when Nature is in an active, intolerant mood, as in childbed, he will often find his confidence misplaced.

Finally, we believe in specialties strictly adhered to. Their existence is at the same time a confession of the paucity and inaccuracy of our knowledge and the best remedy for these. In the present state of medical science, specialties are the necessary stimulus and the quickest method by which to approach scientific exactitude. In the medical millennium, there will be no specialists nor need of any ; our successors of that time may rely on their title of general practitioners. But the millennium for us is a long way off, and we shall, therefore, hail the day when our many distinguished and deservedly eminent obstetricians will be proud of this title and content to be known as *specialists in obstetrics*. Then will this noble science receive a new impetus and advance with giant strides, until the time arrives when gynæcology will have fulfilled its end and will receive its euthanasia.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL SOCIETY.

Eighty ninth Annual Meeting, held in Albany, N. Y., February 5, 6, and 7, 1895.

GEORGE HENRY FOX, M. D., *President*, in the Chair.

An Inaugural Address was delivered to the Society by the President.

The first paper read was entitled

A few Practical Points in the Diagnosis and Treatment of Pelvic Hæmatocœle, with Report of a Case. By W. E. COLGROVE, M. D., Horseheads, N. Y. (See page 279.)

DISCUSSION.

Dr. CURRIER, of New York : The subject is one of such importance that I think it should not be allowed to pass by without a few words of comment at any rate, and I feel that there is little to be added in the way of suggestions for treatment to that which has been so admirably stated by the doctor who read the paper.

Certainly the great question in regard to conditions of this kind, assuming that the diagnosis is correct, is the question of treatment ; and I think that as our experience in these matters increases, our opinion becomes that the less we do in the way of operative measures the more likely are we to benefit the patient ; that is to say, in the majority of cases in which hæmatocœle has taken place, the patient will get well if you let her alone and give her ordinary hygienic care. In such a case as this, however, which has been narrated to us, in which there were evidences of septicæmia, then the policy is no longer advisable, and there certainly could have been nothing more proper in a case such as this, than the operative measures adopted. They are preferable, I think we will all admit, to an operation through the abdomen. You eliminate many causes of possible disaster in operations of this character if the operation can be done by the vagina, and I should say that for the methods which were adopted by the doctor there is nothing but commendation and congratulation to be offered.

The Prevention of Hernia after Laparotomy, with Exhibition of a Device for Relieving the Strain upon the Abdomen. By HENRY S. DURAND, M. D., Rochester, N. Y. (See page 282.)

DISCUSSION.

Dr. WALDO, of New York : I was very much interested in listening to the doctor's paper. The device is absolutely new to me ; but the doctor did not tell us how long he left it on.

Dr. DURAND : I have left it on for twelve weeks.

Dr. WALDO : Of course, the "proof of the pudding is in the eating," and the doctor tells us of the results that he has achieved by this method. Personally I believe, from a theoretical standpoint, that he simply unites the skin, or attempts to do so, over the wound, by a tissue on either side and the lacing between the two, so that it acts very much as an elastic bandage, with one exception, that it does not make pressure over the wound. I think it is very ingenious and I thank him very much for presenting it.

Dr. DURAND : I beg the doctor's pardon ; you can get any amount of pressure that you wish, by placing a pad of cotton under the stitches ; you can get more pressure than from a bandage.

Dr. WALDO : I will say then that if he gets pressure over the wound, I object to it decidedly.

Dr. LEWIS, of New York : I rise simply to say that while admiring this plan to secure the traction on the flaps of the wound, the one difficulty suggests itself that we can not always have this material at hand. I claim no originality in it but I have for a long time been in the habit of pasting material—ordinary gauze strips—along the edge or along both flaps, some four or five inches from the cut, some six or eight inches in length, pasting them on with collodion and then simply tying a knot—tying the two ends together over the light gauze antiseptic dressing which we apply next to the cut. You can untie them, change your dressing, and tie them up again, and so keep the edges steady, and have an appliance which you can prepare if you simply have your bottle of collodion with you, which I invariably carry with me, as I suppose you all do when you go to an operation these days. It is not, perhaps, quite as effective as this, but it is quite effective in operations upon the breast, for which I use it exclusively.

Dr. DURAND : In reply to Dr. Waldo I would say that I do not use any pressure at all, as a rule ; but he said that one could not get any pressure. I say one can get all one wants. In reply to Dr. Lewis

I would say that that material can be obtained in a town of any size very reasonably, and a good smart girl can make about ten yards of it in a day.

Dr. DE GARMO, of New York : I believe the point under discussion is the prevention of ventral hernia, a subject to which I have given a great deal of thought for a number of years, and in my experience in watching these cases, it seems to me that it is beginning at the wrong end. Ventral hernia does not begin in the skin ; it begins in the deep muscles under the skin. I know that the doctor has made that point while he was speaking, but I do believe that no matter what tension you get upon the skin, if your muscular structures are not properly protected by suitable sutures, you are liable to have ventral hernia. If the muscular structures and fascia are held in position by a suture which is not removed too quickly, I do not think, as a rule, you will get ventral hernia. The muscular structures are not perfected by the cicatrization which occurs in the skin. That has been proved conclusively in more ways than one, I think.

Dr. FISKE : This subject is not new to me, except in his method of applying it. I have seen it used in plastic work upon the face, and it is in that work that it seems to me its usefulness is large—in the adjustment of flaps where you do not wish to have suture marks, and they can be adjusted beautifully by this method.

Dr. DURAND : I forgot to mention that fact, but I still insist that my method is good and think these gentlemen will find they are partially mistaken.

A New Method of closing the Abdominal Wound after Cæliotomy. By RALPH WALDO, M. D., New York. (See page 287.)

DISCUSSION.

Dr. BOLDT, of New York : The main idea is to prevent hernia, I believe, and I should certainly admire any one who could bring up something new which will prevent it. So far we have nothing at all which will prevent hernia after abdominal operations. The main features of preventing ventral hernia are simply these : To make the incision long enough to avoid mutilating the edges of the incision, and then to place your sutures in such a manner as to approximate the parts cut in a natural order. Now whether you do that with an interrupted or a continuous suture seems to me almost immaterial, provided you have union by "first intention" ; and, to my mind,

there is nothing which will excel the ordinary deep suture, passing it through the entire structure, making up the abdominal parietes, then to leave these sutures, which are to act as splints, untied until the fascia has been united with a continuous catgut suture; if the incision has been a very long one that is, more than three or four inches, the fascia is not approximated until the peritonæum has first been separately sewn.

The importance of cutting through the linea alba is not only over-estimated, but on the contrary I believe it erroneous. In a hundred abdominal sections I do not cut through it oftener than two or three times. By going beside it directly through the muscles, one is less apt to have hernia resulting, judging from my personal observations, provided, however, that no suppuration takes place in the wound, which is more liable to happen, if extreme care is not used, by going through the muscles, than by keeping in the median line. After having united the fascia, and, of course, the peritonæum, the all-through sutures which close the wound are tied.

I don't care, however, how you close the wound; you are still likely to have ventral hernia. There has been no method discovered to prevent it; but the most rational way to avoid it is by a method such as I have described, or one resembling it in principle.

With regard to the nonsuppuration, by the method of operating with employment of interrupted sutures, I beg to differ with Dr. Waldo and say that we have the whole wound open just as well when we have interrupted sutures as in the other method; it doesn't make a particle of difference, and the suppuration, when it does take place, is just as difficult to treat.

Dr. CURRIER, of New York: I do not think that any one can exaggerate the necessity of securely closing the wound after an abdominal operation. Many women are made miserable, and men too for that matter, after operations for appendicitis and other operations on the bowels, by either imperfect surgery or by unsuccessful surgery—whichever you please to term it and whichever, in reality, it was—and, as was stated by the previous speaker, it does not matter how perfect your method may be or how well designed your operation for closing the wound, a certain percentage of cases will always result in hernia. That occurrence may not take place at once. To illustrate, a case upon which I operated a few weeks ago, in which the original operation was performed a year ago, resulted in apparently firm union of the abdominal wound which continued several months. She was then seized with an attack of jaundice accompanied by excessive

vomiting, the strain connected with which probably loosened the coherence of the edges of the wound and extensive hernia resulted.

Therefore I think that whoever advocates a method that is going to be sure to prevent hernia in every case is liable to be disappointed. It seems to me it is beyond human possibility. There are, of course, however, certain methods of operating which are preferable to others as regards the prevention of this accident, and it seems as if ingenuity had been expended in almost every possible direction in the application of suturing, to the various tissues which are involved in the abdominal wound. I think that the application of buried sutures to a wound of this character, as a routine method, is not desirable and, though it sometimes gives us very good results and we do not get sup-puration, in other cases, even with our most careful surgery and our most sanguine expectations suppuration and hernia follow ; so I think the advocacy of any method as a "sure-cure" method is liable to prove disappointing.

Clinical Report, showing the Tolerance of the Peritoneum and Nature's Kindness to the Surgeon. By HENRY L. ELSNER, M. D., Syracuse, N. Y. (See page 290.)

DISCUSSION.

Dr. EDEBOHLS, of New York : The case is an exceedingly interesting one, and the points that are pertinent and interesting in connection therewith have been brought out so well by Dr. Elsner that it is not necessary to dwell upon them at greater length. I find that Dr. Elsner has not noted, in the literature of the subject, the particular case which I am about to relate, and which is, if anything, a trifle more interesting than his own case. Salin, of Stockholm (*Hygieia*, 1891, No. 12), reports a case in which a similar gauze compress had been left in the abdomen after ovariectomy. Exactly one year later the abdominal wound, which had healed *per primam*, showed evidences of fluctuation at its lower end, the gauze compress came to the surface and was extracted. A small fæcal fistula persisted two weeks after recovery of the gauze compress, while wearing which the woman had enjoyed good health.

The peritonæum would possibly harbor a piece of gauze, if sterile and not too bulky, for an indefinite period, provided the gauze did not become secondarily infected by transmigration of the *bacillus coli* from the intestine.

Dr. BOLDT, of New York : To add another case to the literature, of a similar nature to the one reported by Dr. Elsner, within a year's

time, I think, I had a similar operation in which I removed the uterus and the annexa, the patient doing very nicely. There was no fistula in this case; however, a few weeks subsequent to her leaving the hospital, she commenced to complain of a great deal of griping pain of a similar nature to that described by Dr. Elsner and, as near as I can recollect, about two months subsequent to that, the patient suffering off and on in that manner, she brought one day a gauze strip to me which had been passed *per rectum*. Previously she had suffered much from constipation.

Dr. ELSNER: The surgeon in this case was unfortunately the victim of a careless nurse, and the way in which this error came about, which I explained fully in my paper, was this: The sponges when they were counted must undoubtedly have been superimposed, and this or some other sponge must have been folded upon itself in this way (*illustrating by doubling over one pad upon itself*), so that when the nurse, who reported after the operation: "All sponges present," when counting these sponges, instead of lifting each one separately as a good nurse would have done, simply counted them in this way (*counting the edges of the pile*) with the sponges superimposed, counting this one sponge or some other sponge as two.

Report of Three Extra-uterine Pregnancies. By ARTHUR B. BREESE, M. D., Syracuse, N. Y. (See page 299.)

DISCUSSION.

Dr. VON RAMDOHR, of New York: The cases that the doctor has given us seem to be extremely interesting and they prove one point, and that is that no extra-uterine pregnancy is ever safe to be left alone; sooner or later it is liable to give trouble. Either hæmorrhage takes place, as in one of those cases, or sepsis occurs or inflammation may be set up by a trivial accident, not even a lithopædium will be a guarantee and as a foreign body ought to be removed.

Treatment by injection of morphine, by withdrawal of amniotic fluid through the vagina, by electricity seems to have had its day. Now the profession seems to swing into line for surgical treatment only. The surgical treatment is the only one practically devoid of danger.

I will call attention to another method of operation which the doctor has not used, because he is an accomplished laparotomist apparently, but for those surgeons who have not had a large number of cases and not the requisite dexterity, it is permitted if the sac is any-

where near the abdominal wall, to stitch it to the abdominal wound before or after opening and make the operation practically an extra-peritoneal one. Under such circumstances it is strongly advised not to remove the placenta at once but fill this sac sewed to the abdominal wall with gauze and wait for the placenta to come away. This method in the hands of a great many operators has proved practically devoid of danger and much less difficult than would be a direct extirpation with the attendant danger of hæmorrhage. To guard against this hæmorrhage there is one thing which might perhaps, be of advantage to call attention to, and that is prior to opening the sac or detaching it, to ligate all the three folds of the corresponding broad ligament, using the ligature about the round ligament, which will never tear, as a guide and help to draw the uterus to one side or another as required.

One word against the indiscriminate packing with gauze. After rupture of the sac I removed a six-months-old foetus from the abdomen of a woman in very bad condition. To stop the oozing I introduced something like six yards of gauze making counter pressure from the vagina by tampon. I removed the gauze after thirty six hours. On the eighth day an end of the wound opened and discharged fæcal masses. This ileo-abdominal fistula I treated by inversion of the abdominal edges and firm strapping and after five months it had healed completely. The patient is now perfectly well. I think this fistula was caused by me. My extreme fear of hæmorrhage made me pack the gauze too firmly and leave it in too long.

Double Pyosalpinx evacuating through the Uterus ; Curettage, followed by Pregnancy and Delivery of a Living Child at Term. By
EDWARD N. LIELL, M. D., New York. (See page 305.)

No discussion owing to close of afternoon session.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, February 7, 1895.

The *President*, WILLIAM H. PARISH, M. D., in the Chair.

Dr. FRANK W. TALLEY reported a

Case of Ventrofixation of the Uterus followed by Pregnancy ; Illustrating the Value of Conservative Ovarian Surgery. (See page 310.)

DISCUSSION.

Dr. JOSEPH PRICE : The history of this subject, after the enthusiasm of the first few cases done many years ago had subsided, is that the present interest in it is new with a younger school of operators. It now attracts very little attention with the older school, who had abandoned it after trying a variety of methods. Keith recognized cures of procidentia and less degrees of protrusion of the uterus after some of his ovariectomies, as a result of the use of the clamp. Some of these were double ovariectomies, and in estimating the effects of the operation, it may be that the relief afforded by fixing the uterus forward, was more attributable to the absence of pressure than to the mere fixation, that doesn't last long. Some of the fixations remaining after abdominal section, did not remain fixations. In some of the reported hysterectomies, not even the semblance of a fixation or cord was found to show where the pedicle had been placed. Take for instance the work of Mr. Tait and others in posterior displacements. He passed a suture directly through the fundus of the uterus, fixing the uterus anteriorly. Some of these returned to the hollow of the sacrum and others resulted in descensus. For some reason, in Philadelphia, the results have not been satisfactory. After many operations, Tait abandoned his first operation. In the first operation here, at my suggestion, the tubes were tied at two points, one at the uterus the other about one fourth of an inch from the first ligature. The fixation suture passed between the two and through the abdominal wall. I applied the second to avoid hæmorrhage in case the first sutures came off. This resulted in failure. Wylie and others followed by fixing the uterus by kilting and suturing the broad ligaments and this also was followed by failure. Others have been followed by abortion. In two

cases where I was requested to operate to release the uterus, I asked, in case abortion resulted, that I should not be held responsible: in one the patient went on to term after freeing the uterus, and the other at the end of three weeks aborted, refusing any operative interference. Coincidence, however, is not always cause.

Gynæcologists sometimes operate more than should be done. Pessaries are now under the ban and yet pessaries are not entirely useless. In simple posterior displacements, I find that pessaries are still valuable, as they were in the days of Hodge. For instance, only ten days or two weeks ago, I placed several pessaries and when the patients returned to my office, I found the uterus half a circle from the place in which it was when I introduced the pessaries, now well forward and in good position. Several years ago a husband and wife entered my office, and the wife was in a weak nervous state, fearing that she would injure her husband and fail in the duties of life and was despondent. Her uterus was posterior and tender and was pressing upon the sacral plexus of nerves. This woman was put to bed—the uterus replaced and kept forward by a pessary. In less than a month that woman returned to my office and thanked me for the relief she had obtained. The pessary, therefore, is good in cases that otherwise would be subjected to ventrofixation.

I am glad that a case of this character has been reported. Many times on the operating table after shelling out the ovaries in cases of ovarian abscess, without the use of a ligature, I have insisted that there are women walking about the streets without ovaries. I have now such a case recovering from a section. I advised operation and I failed absolutely to find either tube or ovary on the left side. Only yesterday, I found a suppurating ovary on the right side, and a hole in the sigmoid and broad ligament into which I could introduce my finger, and the tube and ovary absent or completely disorganized. There are cases therefore where ovaries are absent without a section.

Some years ago, some one proposed fixation of the uterus forward, after removal of the diseased and adherent appendages and freeing the uterus and placing a glass tube posterior to the uterus for its support; but the treatment of that particular German was not adopted by any operator.

I would like to see a record of the abortions after these ventrofixations; they certainly occur in a great many cases. You can not tie up the uterus as you can a horse in a stable and expect it to remain harnessed and at rest without suffering and discomfort. The earlier operations done in Philadelphia were not successes.

Dr. ROBERT P. HARRIS: I would like to ask the experience of Dr. Drysdale as to the fixation of the uterus to the abdominal wall after ovariectomy under the old clamp operation. Where the uterus is fixed to the abdomen the tendency is in some cases to produce barrenness. In cases where the enlarged uterus is fixed by puerperal peritonitis, it is attached much higher up than after ordinary operations for ventrofixation. In Mrs. Reybold's case, there were two Cæsarean operations. After the first, the uterus became permanently attached to the abdominal wall as I found it, after death, fifty years later. The fundus was elongated by continued traction, to four and a half inches. This woman became barren at twenty-eight years of age; she had only one child after the operation although she had been twice pregnant before it; there was no question of progressive sterility; I believe it to have been mechanical. I saw a woman some years ago, in New Jersey, in whom the uterus had been fixed by one cornu as the result of a clamp operation for ovarian cystoma, and she menstruated through the abdominal wound. The uterus was asymmetrically developed during pregnancy and there were irregular contractions in her parturition. She died undelivered. I know of several cases in Philadelphia, of fixation in which there was no trouble. One was a patient of the late Dr. Washington L. Atlee, and she bore three sons and three daughters afterward although having but one ovary. I would like to know Dr. Drysdale's experience in such cases.

Dr. THOMAS M. DRYSDALE: I would say in reply to the question that where the uterus is firmly fixed by the old method of clamping and where both ovaries have been removed, of course there is no trouble about pregnancy; but where only one ovary has been removed, I have seen pregnancy occur subsequently. Dr. Parish will recall a case in which I made a ventrofixation unintentionally after removing a dermoid cyst. This woman became pregnant and had no trouble in her delivery. The case was a desperate one; ventrofixation in that way is very different from that which Dr. Talley has spoken of in his paper.

Dr. PARISH: With regard to the causes of death, I think that the condition of the patient at the time of operation determines the result. In correspondence with Dr. Halberstadt, he states the following facts: The patient was passing into a decided collapse, with pulse of 150, face pale and clammy, general surface cool, and she had cramps and vomiting—all these showing that the woman would have died without any question of loss of blood without an operation.

There was not much blood lost during the operation and the temperature of the water was not extreme, he says, "not too hot for the hand," I believe that Dr. Halberstadt thinks that he might have saved the patient had he operated on the day he first saw her. He followed the usual plan of giving morphine and of waiting for several months until the placental circulation was less active. I would like to correct one statement of Dr. Price, this is Dr. Halberstadt's second case, but first operation, at the full period of ectopic pregnancy.

Dr. JOSEPH PRICE: Dr. Harris, as I understand him, has called our attention to the subject of sterility following some cases of ventrofixation either of inflammatory or operative origin. I would like to call Dr. Harris' attention to the fact that repeated pregnancies have occurred. Take, for instance, Leopold's series of repeated Cæsarean sections. In all cases of Cæsarean section there has been ventrofixation from resulting peritonitis. And I have insisted upon the fact that it is the ventrofixation which saves the life of the patient. The adhesion of the uterus to the anterior wall of the abdomen prevents a general conflagration. In Dr. Noble's case and in Dr. Kelly's patient, the uterus was fixed by adhesions with sinuses, through which the whole progress of the labor could be watched through the anterior wall, only requiring enlargement of the sinus. In another case, Dr. Wilson's, there were five or more metro-abdominal sinuses with the ventral fixation. Dr. Lusk's case also had them—the number of cases is not small. It also depends upon the kind of woman, as some are more prone to conceive than others. The fact is that the fixed uterus is liable to become pregnant, but this is not the rule. It is also a fact that a stationary and rigid position of the uterus favors unfavorable presentation of the child.

Dr. HARRIS: The fact I referred to was that the woman stopped bearing children at the age of twenty-eight, after her fourth pregnancy. Two by craniotomy, two by Cæsarean section.

Dr. TALLEY: It was not my purpose to call up a discussion on ventrofixation. It was simply my intention to report a case which contained the interesting fact that a girl from whom a portion of an ovary had been removed, had become pregnant from the portion which had been left, she having lost the other ovary a long time before. As regards ventrofixation, I have had a number of cases in the past three years and have found the results to be very satisfactory. This girl I referred to is in her tenth week of pregnancy, is doing very well, and I can see no greater reason why she should abort from

the ventrofixation, which rather loosely attaches the uterus in its normal position, than should she if the uterus be firmly fixed posteriorly, the condition in which I found it.

Report of an Operation for Ectopic Gestation,

communicated by Dr. A. H. HALBERSTADT, of Pottsville, was read by Dr. William H. Parish. (See page 312.)

DISCUSSION.

Dr. J. PRICE: This is the second case at term of Dr. Halberstadt's in twenty-five years. The first case was a *perfectly hopeless* one: this was not a hopeless one, the case was lost through delay. This is the practice throughout the country. The doctor saw the case in spurious labor and before the rupture and hæmorrhage, the most favorable period for mother and child. He might have saved the woman by early operation without morphine. I also think that the free use of very hot water was a mistake, it contributes to shock. Then the removal of the placenta was another mistake. Exceptionally few placentas have been removed safely from the uterus and surrounding organs and tissues while living or growing; in fact a man knows very little about hæmorrhage until he tries to remove a placenta from the surrounding pelvic organs. Dr. McMurtrie of Louisville and Dr. — of Opelika, Ala., attempted to take away the placenta from the posterior surface of the uterus and broad ligaments and he had a shocking hæmorrhage; failing to check it by other means, he delivered the uterus and applied a rubber ligature to the neck and removed everything and saved his patient. He could not have saved her if the placental attachments had been behind the broad ligaments and the viscera. I saw a case in this town. The case was seen by Dr. Hoffman in spurious labor. If we wait until rupture occurs the woman will be likely to perish from bleeding; and but few cases will be saved by the separation of the growing living placenta. About all the cases, except Martin's, Jessup's and a few others, were lost.

Dr. HARRIS: In his last report there were twenty-eight cases in all in which the children lived.

Dr. PRICE: I am glad to hear it, but in those cases the work has been partial and the sac was at once hermetically sealed. There may be an error of record and there is nothing to warrant the correctness of this group of cases.

Dr. BALDY: Perhaps the reason why the patient did not lose

much blood during the operation was because she had lost it all before the operation.

Dr. J. PRICE: The statement that the water was as hot as the hand could bear is not satisfactory; the temperature should be determined accurately with a thermometer. Of course the woman was dying at the time of operation and there could not be much hæmorrhage.

The following *Communication* from Dr. W. J. SMYLY of Dublin was read by the Secretary:

ROTUNDA HOSPITAL, DUBLIN, *October 28, 1894.*

DEAR SIR: Having read with interest Dr. Price's paper on Methods of Pelvic Surgery I was surprised to find the following: "If you read the reports of the Rotunda Hospital you will find that the curette is used freely and you will find that the mortality from puriform disease is very large; in one year there were six suppurations in the pelvic opening above the pubic arch." I have had to go back to the year 1888 to find these six cases and I find that not one of them was the result of curetting. On the contrary it is distinctly stated that out of one hundred and five cases curetted there was no reaction following. I remain, dear sir,

Yours faithfully,

W. J. SMYLY.

DISCUSSION.

Dr. JOSEPH PRICE: Either the original report of the Rotunda Hospital is false in its statements or this communication is incorrect. It would give me very great pleasure to correct any statement of mine which I learned was incorrect and I am sure that I would not like to do injury to such an institution as the Rotunda Hospital. But Dr. Smyly does not deny that one hundred and five cases is correct, and the fact that the curette was used in one hundred and five cases shows that there is something wrong in the maternity work. This amounts to about ten per cent., and probably more. In over fourteen hundred cases at the Preston Retreat, not to speak of the thousands of cases in my individual practice, I have not resorted to the curette nor lost a case. I think therefore that the writer of the communication shows supersensitiveness in his comments on my statements.

The Best Method for the Sterilization of Catgut

was the title of a communication by Dr. ARCHIBALD McLAREN of St. Paul, and was read by the Secretary. (See page 313.)

Exhibition of a Boeckmann Sterilizer. By WILLIAM H. PARISH, M. D.

DISCUSSION.

Dr. GEORGE I. McKELWAY: In any preparing of catgut by other than dry sterilization for surgical purposes it is important, first of all, to get rid of the fat with which it is saturated as this entirely forbids the permeation of it by any fluid intended to make it aseptic. The liquids usually used to rid it of its fat are alcohol and ether and they are both failures for this purpose. As you all know, catgut is really made from the mesentery of the sheep and the saturating fat is mutton suet. Suet is practically insoluble in alcohol and only slightly soluble in boiling alcohol and it is but very slowly soluble in sixty parts of ether. There is a solvent, however, which readily dissolves suet and this is petroleum benzine—in two parts of which it is soluble. The reason that the heavier pieces of catgut yield cultures as ordinarily prepared, is because their cores can not, by reason of the nonextraction of the suet, be got at or into by the solutions depended upon to render them aseptic. I have used catgut largely, without being able to trace any ill consequences to its use and I prepare it myself for my own work. I form it into coils of convenient length and put these coils in a wide-mouthed bottle. If you will follow the process you will notice that they are never taken out of this bottle or touched again until they are taken out to be used.

I cover them with petroleum benzine and let them stand for, say, twenty-four hours, then pour the benzine off and again repeat the process (after the pouring away of the second benzine the gut is entirely free from fat, and, when dry, will absorb water or any fluid as promptly as will a piece of cotton string), then I cover the coils again with a 1-to-500 solution of bichloride of mercury in alcohol and at the end of say six hours pour this off and rinse the coils with additional pure alcohol to entirely free them from corrosive sublimate (a small proportion of corrosive sublimate left or put in the solution in which it is to be kept will very soon make the gut weak and rotten). I then fill the bottle full with alcohol and leave the coils in this liquid until I need to use them. I can imagine no possible reason for the use of oil of juniper wood or berry, and have never yet found anybody who could give me a reason for using this material, unless it was that somebody else did it. I do not know that this method is at all superior to the dry sterilization and, it may be, because of the time and trouble necessary, it is inferior to it, but it has certainly given me gut upon which I have had no hesitancy in depending.

Dr. J. PRICE : Where suppuration occurs after operation, it is not so much due to the quality of the ligatures used as it is to their size. When several turns of heavy ligature are applied, the spool of ligature is bound to come away and give rise to a sinus. Catgut as a material for ligatures has been generally condemned and justly so, for a number of reasons. It is not only on account of the difficulty in sterilization, but because it is not a good surgical material ; it is not a good protection against hæmorrhage and only serves to hold for a short time. The very smallest Chinese silk ligature can be tied with a knot which does not slip and will hold indefinitely and does not cause sinuses. For this reason I prefer it to catgut. There is a difference between commercial catgut ligatures and strings for musical instruments, because the latter are hand-made, the former cut by machinery across fiber. I made a number of experiments some years ago and still have a number of fiddle-strings which I bought for this purpose. Many have used it constantly in ovariectomy operations which have gone to their graves in consequence. There is not a surgeon in the country who has not lost cases from this cause. Some years ago some one returned from Germany after a post-graduate course of beer and cheese, and read a paper in this Society advocating the use of catgut ligatures. One of my students a few days later went West, and in his first operation the patient bled to death from the use of cat-gut ligatures—a perfectly favorable case lost by hæmorrhage. In Milwaukee last year, just such a discussion took place and a prominent operator reported four consecutive cases lost from the use of catgut ; he denounced its use and said it should be banished from the face of the earth. He occupies a position in one of the prominent institutions of the country and is in favor of antiseptic surgery. A New York man defended catgut and said that he used it in all his operations. One of my students afterward went to New York and saw one of his operations, a favorable one in every way, and he lost the patient from hæmorrhage from the use of catgut. For my part I do not see why they use it. Catgut can not be used with safety for a large vascular pedicle ; an undue amount of ligature and an increased number of turns are employed to secure the vessels, and, as stated before, this is likely to cause suppuration, even if the patient does not perish from hæmorrhage. It is necessary therefore to call a halt in the recording of cases and advocacy of treatment without sufficient experience. It is necessary in a society of this kind to speak plainly. It is one thing to say that catgut may be safely used in the hands of some city surgeon and quite another to advocate its

use by a man in the country who has very few facilities. It is better to use a material that can be sterilized simply by boiling and can be prepared by any one who can get a shaving-cup or anything that will allow it to be boiled in.

Large Cyst of the Left Ovary.

Name, Yu Yang Lau; married; no children; aged twenty-five years; height, 142 cm. (4 ft. 8 in.); girth, 172 cm. (5 ft. 5.75 in.); circumference of tumor, 175.5 cm. (5 ft. 9 in.); from ensiform carti-



lage to symph. pub., 99 cm. (3 ft. 9 in.). Operation November 1st, Dr. Elizabeth Reifsnyder at Shanghai. Amount of cystic fluid, 88 quarts (176 lbs.); weight of cyst, 6.5 lbs. No free fluid in abdominal cavity.

November 29th.—The woman is now up and walking nicely; she is gaining steadily in flesh and strength.

Dr. JOSEPH PRICE described the preceding case and presented the photograph of the patient before operation. He also made the following

Report of Cases :

CASE I.—Mrs. J. H., aged thirty-two years ; four children ; one miscarriage ; admitted January 3, 1895. Menses absent three months ; rupture took place in August. In a consultation at that time the consultant recognized the true character of her trouble and advised operative interference which she refused. Recurring attacks occurred at long intervals ; marked emaciation with constant pain ; under treatment and in bed for a period of about six months.

She came to the city for the removal of the small tumor developing ; suppuration had begun in the contents of the sac, extending well up toward the umbilicus ; adhesions were universal and strong ; fixation of the sac firm ; enucleation complete, followed by great shock. Irrigation and drainage—drainage was quite free for two days. Throughout the first and second day her general condition was good and promising, the third day symptoms of collapse developed ; pulse feeble and rapid ; cold extremities. Reaction followed stimulation. She has returned to her home perfectly well.

A typical case of suppurating ectopic sac and blood clot. This is the fourth case of this character I have had recently. All of the operations should have been done early.

Neglected and suppurating blood clot and sac of tubal pregnancy are unpromising conditions.

CASE II.—Mrs. K., aged twenty-seven years ; one child three years ago ; admitted to hospital January 9, 1895 ; in collapse and exsanguinated when admitted ; concealed hæmorrhage was pronounced ; pulse at the wrist quite thready and rapid. She was carried into the hospital by her husband cold and apparently dying. Stimulation and hot applications were directed ; perceptible reaction followed with warmth of extremities and surface. In the section I found an enormous quantity of blood and clot in the peritoneal cavity. A thorough irrigation—washing out of all clot and blood—followed by glass drainage. She recovered rapidly with a good pulse. The fœtus was only perceptible in size. Recently I have looked more carefully for the fœtus and only exceptionally do I fail to find it. I am now satisfied that in many of my early operations for ruptured tubal pregnancy I should have found the fœtus. The tiny little body is commonly lost in clot, is unrecognized, or remains in the peritoneal cavity.

CASE III.—Mrs. A. C., aged thirty-five; six children; admitted February 3d; carried in at midnight screaming with pain. She had been watched by a good operator and diagnostician for four days. She requested the counsel of her family physician, Dr. Benjamin, of Camden, who recognized some serious mischief in the right iliac fossæ—probably an appendicitis with a huge pus accumulation. Her last child was only six months old. Menses regular, and no history of a growing tumor.

The operation was done early the following morning. The tumor filled the pelvis and extended high up to the right, increasing rapidly in size; extreme pain and tenderness; the adhesions universal; small bowel-head of cæcum and appendix strongly adherent to a black tumor.

After freeing of all adhesions and enucleation of its pelvic attachments I found two rotations of pedicle to the right; irrigation and drainage. She is now in her second day and doing beautifully.

CASE IV.—Miss A. L., colored, aged thirty-seven; admitted February 4th; had been suffering quite general pelvic and back pain; difficulty in micturition and defecation; locomotion painful; recently free uterine hæmorrhage; marked emaciation; multinodular fibroid, filling pelvis, fixed on the right side; enucleation, Koeberlé nœud. Operation February 6th; she is now doing nicely.

The Action of Quinine on the Internal Genital Organs during Pregnancy and Menstruation. By GEORGE COROMILAS, M. D., of Calamata, Greece. Read by the Secretary. (See p. 316.)

Adjourned.

FRANK W. TALLEY, Secretary.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

December 21, 1894.

The *President*, FRANKLIN H. MARTIN, M. D., in the Chair.

Small Dermoid Cysts of Both Ovaries.

Dr. CHRISTIAN FENGER: This is a specimen of double-sided dermoid in both ovaries, found in an unusually early stage. The patient came to operation after the usual uncertain diagnosis of something be-

hind and at the side of the uterus. Whether this was a pyosalpinx or something else was of course hard to determine ; but there was a tumor, and I had reason to believe that it caused symptoms which made operation desirable. I thought it was a pyosalpinx, because this is the most common condition. I operated through the abdomen and found the omentum fixed down to the bottom of Douglas' *cul-de-sac*, which it partially filled. On the right side, where there was most pain, I found the ovary and tube half-buried in the broad ligament, which is often the result of previous peritonitis. It felt to me too large to be left, and as the pain had been localized there I freed it from adhesions. I felt fluctuation all through the ovary, and, concluding that it was cystic, I removed it together with the tube. The left ovary was also partly buried in the broad ligament, and in order to make an examination it was necessary to free the ovary from adhesions. I felt in the proximal third of this ovary a tumor the size of a hazelnut, which I dissected out and found to be a dermoid. In the other ovary I saw a still smaller body, which I at first thought was a lipoma because it looked yellow and round, but upon section I found it to be also a dermoid. I intend to have sections made of the ovary, to ascertain if there are more dermoids in it ; because they are sometimes multiple, although as a rule they are single. This case has confirmed my practice of years to examine an ovary carefully before deciding upon its removal, when the tube is open. Of course this applies only to small tumors of the ovary. I have for a long time been in the habit of incising serous cysts, and, if hæmorrhage occurs, inserting sutures, or extirpating a portion of the ovary and suturing the rest.

Pedicle Needle.

Dr. J. T. BINKLEY : I desire to present three needles of different sizes which I designed for carrying ligatures through the broad ligament in general pelvic and abdominal work. I have used these needles for about a year. This needle can be passed through the broad ligament, or any tissue through which a ligature is to be passed, the ligature caught, and the needle withdrawn. As the point of the needle is split, it allows the thread to be easily pulled out. I have never had a failure with it, and several of my friends have tried it and like it. It is made by Charles Truax, Grieve & Co., and is not more expensive than other pedicle needles. This needle is especially useful in the application of a quilted suture in the broad ligament, as it allows the immediate withdrawal of the needle as soon as the thread is caught on the opposite side of the ligament ; whereas with the old style needle

it is necessary to draw the thread first through the tissue, then the entire half-length of the ligature must be pulled out of the eye before the needle can be withdrawn.

Dr. SENN: Have you had any trouble in puncturing veins and producing hæmorrhage?

Dr. BINKLEY: Not more than with other needles. This needle need not be sharp; some are duller than these.

Dr. BYFORD: I have used this needle a few times, and it works nicely where it is necessary to ligate the broad ligament in sections.

Dr. MARTIN: I have used this needle several times in tying the broad ligament and have been very much pleased with it.

THE EXTIRPATION OF PELVIC GROWTHS BY THE KRASKÉ METHOD.

BY JOSEPH B. BACON, M. D.

Dr. Bacon said that in brilliant and aggressive surgery, America is unexcelled, yet the literature of extirpation of the rectum by the sacral method is very scant. Hence we must conclude that many of our leading surgeons have not met with brilliant success in this work or are not yet ready to report. The removal of a part of all or the two lower sacral vertebræ and the coccyx, together with the entire anus and rectum, for an extensive cancerous growth, even in this age of aseptic surgery, seems quite rash; but the advantages of the sacral method are obvious when one compares the results obtained by this method with those obtained by the old method, and considers that the appended list comprises cases that, as a rule, were entirely inoperable by the old method.

My experience has been limited to three cases:

CASE I, 1891.—Male, aged thirty-four. Extensive carcinoma of the rectum, extending up five inches from the internal sphincter. The anus and rectum were removed and the lower end of the gut was sutured into the upper angle of the sacral wound. The patient made an interrupted recovery and lived twenty-one months. Secondary carcinomatous growths began in the peritoneal lymphatics and extended to bladder, prostate, and liver, causing death from exhaustion.

CASE II, 1892.—Male, aged sixty-one. Extensive carcinoma of anus and rectum, necessitating their entire removal. Death occurred forty-eight hours after the operation from shock. The growth had involved the prostate and base of the bladder, but this was not diag-

nosed on account of the malignant stricture and the thickness of the rectal walls. The growth appeared to be distinctly movable, and therefore operable, but the patient was too old for so extensive an operation, and a colotomy should have been done instead.

CASE III, 1894.—Female, aged thirty-five. Specific inflammatory stricture of anus and lower four inches of the rectum, with incontinence, complicated by fistulæ. The patient had undergone four operations for its relief during the last four years, divulsion twice and internal proctotomy twice. Operation April, 1894. Complete extra-peritoneal excision of anus and four inches of the rectum. Uninterrupted recovery. The peritoneal cavity was not opened.

Fenger lays great stress upon the location of the cancer, whether it is high or low, as regards high or low percentage of mortality after the operation. The peritoneal cavity must be opened in all cases if the cancer is situated high, but it is seldom necessary to open it when the cancer is situated low. In both my cases of carcinoma the peritonæum was freely incised, and the mortality was fifty per cent. Fenger has done four high operations for cancer with a mortality of fifty per cent., and seven operations for cancer situated low down in the rectum with a mortality of only 28.5 per cent. ; he has also operated five times for stricture by the sacral method without a death. He has collected statistics of eighteen operations for carcinoma high up with a mortality of fifty per cent. In the two hundred and twenty-nine cases recorded by fifty-nine European and American surgeons, as above mentioned, there are twelve operations for stricture with no deaths. Of the one hundred and ninety-two cases operated upon for cancer, fifty-eight died, a mortality of 28.4 per cent. Many of these cases would to-day be classed as inoperable, and therefore the mortality for the operation at present should be materially lessened. Kraske reported in 1885 ten cases with four deaths, a mortality of forty per cent. König collected more recently statistics showing a mortality of twenty-four per cent. Von Bergmann has recently reported twenty-seven cases with only one death, a mortality of three per cent. Thorndike has collected statistics showing an average mortality by the old method of sixteen per cent. As only cases of cancer or stricture situated low in the rectum or at the anus were operable by the old method, the statistics are in favor of the new method. Kelsey has recently reported twenty-four cases, the majority of them non-malignant strictures, with seven deaths, a mortality of 29.1 per cent. McCosh states that he has observed that excision of cancer gives greater relief than any other method. I noticed in my

two cases that they had continence of fæces, except at times when the movements were diarrhœal in character. Fæcal continence was better than in any of my cases of colotomy. This should be naturally expected, as the sigmoid is not removed, and as an acute angle is made by bending the lower end of the gut to unite it with the skin at the upper angle of the sacral wound. While the statistics of the sacral method are too new to enable us to form a definite opinion as to the duration of life after the operation, yet the thorough removal of the growth offers a much greater prolongation of life than could be expected by the old method. Czerny, in thirteen years at his clinic at Heidelberg, performed one hundred and nine operations for cancer of the rectum by both the old and the new method. Of these, ten patients died from the operation, twenty-three lived two years, sixteen lived three years, fourteen lived four years, nine lived five years, one patient lived six years, one eight years, one eleven years, and one thirteen years.

Judging from these results, we should in the near future be able to render much greater relief to this pitiable and hitherto hopeless class of patients. The fact that rectal diseases are now recognized as a distinct specialty will tend to keep these patients from irregular practitioners, and as a result cancers will be more frequently recognized in the early stage and the possibility of cure by operation thereby greatly increased.

The cause of death was not given in many of the cases in the list, but most of them were from sepsis. Unfortunately aseptic work in rectal surgery is almost impossible. Much can be gained, however, by thorough cleansing of the anus and rectum. Where the anus and rectum are to be removed the anus should be firmly closed by a strong ligature or heavy forceps, and the bowel kept closed by not severing it above the growth until the peritoneal cavity has been closed by sutures, packing, or both. Five patients died from pulmonary embolism.

Schede reports three deaths due to fresh thrombus in the femoral vein, and suggests that forced flexure of the hip joints, together with the elevation of the pelvis, as practiced by many operators, in order to lessen the hæmorrhage while doing a sacral section, is a very dangerous procedure on account of embolism.

The advantages of the sacral over the old method for the removal of rectal growths are: 1. After removal of the coccyx and a part of the sacrum the operation upon the rectum is comparatively open and the hæmorrhage can be reduced to a minimum. 2. The operation

can be done rapidly. 3. Growths inoperable by the old method can be readily removed. 4. Greater prolongation of life and comfort than after colotomy. 5. Less fæcal incontinence than after colotomy.

I have been able to collect from the literature, excluding the rectal cases, reports of one hundred and thirty-three cases of pelvic growths operated upon by the sacral method. Of these one hundred and twenty-six were cases of hysterectomy for cancer; two were cases of suppurating dermoid cysts discharging through the vagina, result good; one was a case of cystic tumor, the size of a child's head, situated above the prostate, with recovery (Czerny); one was a case of an almost impacted uterine myoma, by the same operator, with recovery; and three were cases of pelvic tumors with recovery. Czerny also reports eight cases of cervical cancer operated upon by the sacral method with only one death; one case of large uterine sarcoma with recovery, but the patient subsequently died from metastasis; one case in which he removed the uterus by the sacral method, and in which he had amputated the cervix for cancer fourteen years previously.

These reports are good illustrations of a series of cases inoperable by any other method.

Westermarck reports one hundred and four cases of hysterectomy for cancer, with twenty-five deaths—a mortality of twenty-four per cent. Of this number he himself operated upon ten cases with two deaths, one immediately following the operation, the other twenty-six days after operation, from cystitis and pyelitis. In this list he quotes Herzfeld, who operated upon five cases with one death. One of his cases is especially interesting and demonstrates the advantages of the sacral method:

Female, aged forty-two. Cancer of cervix. Operation thirteen days after labor. The body of the uterus measured six inches in depth. Hysterectomy. Recovery. Patient was able to get up one week after the operation. Supravaginal amputation in this case was out of the question, as the lochia would have infected the peritonæum.

Goffe considers the method an ideal one where the uterus is adherent and there is extensive disease of the appendages.

Montgomery's cases are very interesting, both as to results and on account of the thorough and radical method of operating. In one case he removed the uterus, pubes, ovaries, posterior wall of the vagina, and the entire anus and rectum, with recovery; in another case he removed the uterus, ovaries, and three inches of the center of the

rectum for cancer, with recovery; in another case he removed the uterus, tubes, and ovaries for cancer, with recovery.

Schede reported twenty-eight hysterectomies with eight deaths, and stated that the mortality would have been greater had the vaginal method been employed. These patients were operated upon only as a last resort, with very dubious chances of recovery on account of severe hæmorrhages and exhaustion. One patient was fifty-eight years of age, another seventy-one, and another sixty-two. He examined fourteen of these patients at periods varying from four to twenty months after the operation, and considers that there is a probability of their being permanently relieved. He believes the sacral method of value in cases in which the vaginal method is impracticable, and that the sacral method is not necessarily more dangerous in uncomplicated cases. He states that recovery is more tedious after the sacral method, and that his experience teaches him that, when the bladder is involved and the disease has surrounded the ureter, it is better to dissect the diseased part of the bladder, and to resect the ureter and extirpate the corresponding kidney, than to be conservative, as in Case 9 of his report. He says radical measures in these cases give the best results.

In this report of one hundred and thirty-three cases there was a mortality of 21.5 per cent. Causes of death: shock two, sepsis twelve, heart paralysis one, hæmorrhage three, cystitis and pyelitis two, nephritis one, pulmonary emboli four, iodoform intoxication one, unknown two.

The mortality of the operation in the future must be greatly lessened, for by following the suggestion of Herzfeld and making the operation practically extraperitoneal the risks from sepsis would be reduced to a minimum. He opens the peritonæum through Douglas' pouch; then, when possible, dissects the peritonæum from the fundus of the uterus, and dissects the vagina loose from the bladder by opening into the *cul-de-sac* between the bladder and the uterus. Then, after suturing the peritoneal surfaces together, he closes the abdominal cavity before removing the cancer, and thus prevents infection of the general peritoneal cavity. Again, as Schede suggests, if the Trendelenburg position is not used the danger from pulmonary emboli will be lessened, the hæmorrhage will be seen during the operation and controlled, and the danger of secondary hæmorrhage from vessels that were overlooked, because they did not bleed while the pelvis was elevated, would be practically avoided.

I have been prejudiced against the sacral method of operation for

cancer of the uterus, and in a number of cases inoperable by the vaginal method have advised that no operation be done. Since I have looked up the literature more carefully, however, and have noted the professional standing of the surgeons who have been operating by this method, I am more favorably impressed with the good and great method that Kraskè has given us, and believe we have been too conservative in dealing with cancer of the pelvic organs.

The cases reported in this paper were, as a rule, neglected cases, and the operations were done only as a last resort. But, were the uterine cancers more generally removed by this method and the milder cases added to the list, the percentage of mortality would be much lower and the relapses far less frequent on account of the more thorough removal of the diseased tissues.

The indications for operation by the sacral method, as suggested by the principal operators, are :

1. When the uterus is too large to remove through the vagina, and the tumor is impacted in the pelvis.
2. When cancer of the body of the uterus would infect the peritonæum if removed by any other method.
3. When the carcinoma involves the vagina and uterus and sacral glands.
4. Pelvic dermoids or inflammatory deposits that have suppurated and opened into bladder and vagina or rectum.
5. Large tumors of the prostate.
6. Large paravesical tumors.
7. Malignant growths of the uterus involving the rectum.
8. Pelvic deformities, especially osteomalacia.

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DISCUSSION.

Dr. NICHOLAS SENN: I expected, from the title of the paper, that the essayist would confine his remarks to a consideration of the advantages and disadvantages of the sacral method of operation in the treatment of affections of the rectum and uterus otherwise inaccessible. From the statistics he has gathered and from the remarks he has made I am fearful that the value of the much-lauded Kraskè method has been greatly over-estimated. While Kraskè has had the honor of being considered the originator of this method by common and almost general consent, he shows that Collert was the first to conceive the idea of enlarging the field of operation—resection of the coccyx as a preliminary step in the operation for removal of the carcinomatous rectum; Kraskè simply carried this principle further, and, in addition to the removal of the coccyx, removed either in part or wholly the two lower sacral vertebræ. The daring which characterizes modern operating has carried the operation far beyond the Kraskè limit, and the Rousseau sacral operation has recently been described. He extends the operation as far as the sacral canal, and claims for this certainly mutilating procedure the best results.

In order to discuss intelligently the application of the sacral route in the operative treatment of malignant disease of the rectum, or the uterus and its annexa, it is absolutely necessary to classify the cases more accurately than has heretofore been done, because I consider unnecessary resection of the sacrum exceedingly harmful, as it greatly increases the mortality of the operation without furnishing sufficient advantages to justify its employment.

Carcinomata of the rectum extending no further than four inches above the anus are readily accessible by simple preliminary resection of the coccyx. Sacral resection must be reserved for those cases in which it becomes absolutely necessary to open the peritoneal cavity in order to remove the diseased rectum. I have very recently removed four inches of the rectum from a woman quite advanced in years, without even a preliminary resection of the coccyx, because by placing the patient in the proper position this could be done.

A simple median incision from the tip of the coccyx to the margin of the anus gives abundant room to deal efficiently with the lower segment of the rectum. I would, therefore, lay it down as a rule that the Kraskè operation should be resorted to only in cases in which resection of the coccyx does not furnish ample room to deal with the

malignant rectal disease. In all operations for carcinoma of the rectum severe hæmorrhage from the veins in the pararectal tissues occurs; this can be safely prevented by elevating the pelvis. I therefore place the patient upon a low cot with an enormous triangular pillow under the pelvis. The arterial hæmorrhage can be easily controlled by the use of hæmostatic forceps, but the venous hæmorrhage, unless this position is resorted to, is exceedingly difficult to control. I must enter my protest against the too prevalent practice of attempting radical operation in improper cases, and I regard the following pathological indications as absolutely contraindicating all radical operations:

1. Carcinoma of the rectum that has extended beyond the rectal tissue, invaded the loose connective tissue, irrespective of the location of the carcinoma. It is a condition readily determined by rectal examination; when the surgeon finds the rectum immovable at the seat of the disease, imprisoned, as it were, in the pararectal carcinomatous tissue, no sacral operation, no matter how extensive it may be, will prevent a speedy recurrence.

2. Involvement of the post-rectal lymphatic glands. I regard regional infection of the lymphatic glands incompatible with a permanent result either by the Kraskè or the old operation.

I believe that patients presenting these conditions are more benefited, live longer, and enjoy life more by the establishment of an artificial anus, a comparatively safe procedure. The surgeon must not always be satisfied with immediate recovery from the operation, but must estimate the influence of the disease and calculate closely and accurately the benefits to be derived from the different operative procedures.

Encouraging reports have been received from Europe regarding the application of the Kraskè method of operative treatment of malignant and otherwise inaccessible benignant affections of the uterus and its annexa, but I fear that history here will again repeat itself, that the patients who have been reported in the medical press as permanently cured will be found to have died a few weeks or months after the operation.

The remarks I have made with reference to contraindications for radical operation in rectal carcinomata apply with equal force to the same disease affecting the uterus. I believe that when the history of gynæcology shall be written twenty-five or fifty years hence, the present rush for the application of severe surgical measures in hopeless cases will be in contrast with the practice then in vogue.

The essayist did not mention the various attempts that have been made from the time that Redige and others suggested a temporary resection of the sacrum until now, with a view of preventing a part, at least, of the mutilation in such an operation, and restoring the continuity of the posterior bony wall of the pelvis by replacing the temporarily detached bone after the completion of the operation—procedures which I believe possess no intrinsic advantage and will be speedily abandoned by the practical surgeon. I can conceive of one great advantage incident to Kraskè's operation in carcinoma of the rectum in which extensive infiltration of the rectal wall has taken place without stenosis—the most unfavorable form of carcinoma of the rectum for radical operation. In these cases early extension of the disease often occurs into and through the loose pararectal connective tissue. This condition occasions great difficulty in bringing the proximal end of the rectum down to the location occupied by the anus. It is impossible in the majority of cases to bring the rectum down to the anus and hold it there, because on the proximal side of the carcinoma no dilatation of the rectum has taken place, as the carcinoma has not produced any obstruction. In cases of circular carcinoma of long standing, however, where the rectum on the proximal side has become enormously distended, it is easy to bring down the rectum and sew it to the anus. In these cases it has always been my habit, instead of subjecting the patient to unnecessary pain and to great risks of infection, to establish a sacral anus in the upper angle of the wound. I have had a number of such operations, and the patients have been as comfortable as though I had sewed the bowel into the anus. I therefore regard Kraskè's procedure as advantageous in carcinoma characterized by diffuse infiltration without stenosis or obstruction.

I have resected the rectum at least fifteen times by means of the Kraskè method, with one death. In about three cases the same operation was performed for cicatricial stenosis, without a death. I have always been extremely careful in not carrying the resection of the sacrum beyond its legitimate limits, and at the same time guarding against profuse hæmorrhage by position and by resorting to the finger in preference to cutting instruments in removal of the rectum. I am inclined to call this rather an enucleation of the rectum for carcinoma than an excision. The surgeon who removes the carcinomatous rectum by excision will have a great mortality; while the one who follows the loose connective-tissue spaces, resorts to blunt instruments, and carefully guards against hæmorrhage will show the best results. At

the same time the surgeon should not attempt to do too much after the carcinoma has been removed.

The more experience I have in rectal surgery the more I have become convinced that efficient and adequate drainage is an absolute necessity to ward off sepsis. I therefore leave a large part of the wound open, and tampon with iodoform gauze for thorough capillary drainage. This procedure prevents the accumulation of primary wound secretions which always appear in this locality, and which must be regarded as a direct, fruitful source of infection, the primary wound secretions becoming the culture medium for pathogenic germs. I hope the few remarks I have made will give some food for thought and caution against the too indiscriminate performance of extensive sacral resection as a preliminary step to resection of the carcinomatous rectum or removal of carcinoma of the uterus.

Dr. CHRISTIAN FENGER: I was misled by the title given in the announcement, Removal of Pelvic Growths by the Kraskè Method, and understood the subject for to-night, not to be carcinoma of the rectum, but other diseases of the pelvis. Therefore I have not reviewed my cases of carcinoma of the rectum. I have, however, performed extirpation of the rectum at least fifteen or sixteen times. I have seldom been obliged to do anything except the low operation, and have of course tried to avoid the operation on the sacrum as much as possible. I have found that most carcinomata can be operated upon by the posterior incision in the rhapshe or by the perineal operation alone; the next step to gain operating space is Kocher's extirpation of the coccyx; the next step, division of the lateral sacral ligaments; the next step, Kraskè's resection of one half of the sacrum. Much more is gained by the osteoplastic temporary transverse resection as devised by Herzfeld and Hochenegg. I prefer this to the Kraske method, because, if it succeeds and replacement of the sacrum and coccyx takes place, the pelvis is well protected afterward, and much more operating space is obtained.

I have had the same experience as Dr. Senn and Dr. Bacon, that extirpation of non-malignant rectums usually does not cause death. For the removal of other tumors of the pelvis, not carcinomata of the rectum, by the same method, my experience is limited to the following three instances:

First, a carcinoma of the uterus which had attacked the broad ligament. About six years ago, having read the reports from Europe of attempts to operate on more advanced cases of carcinoma of the uterus, with invasion of the broad ligaments, by more extensive oper-

ating, I was led to hope for some help. In this case I found sufficiently free access to the uterus and broad ligaments could be had by temporary resection of the sacrum at the usual place. The ureter which passed through the carcinomatous mass had to be resected and was implanted into the rectum. The wounds healed, the ureter did not heal in, and a sacral urinary fistula remained. The patient died of exhaustion five months afterward, without having left her bed. This experience caused me to abandon operation on carcinomata extending beyond the uterus.

The second was a case of fibroma of the uterus, the size of an orange, which I first attempted to remove through the vagina. I commenced the operation as usual, in the lithotomy position, by opening the posterior *cul-de-sac*, but found it impossible to bring the tumor down, even with pressure from above the symphysis pubis. I then made a resection of the sacrum and removed the tumor, which was located in the posterior wall of the cervix, without opening the peritoneal cavity. The patient recovered without any particular disturbance, and her condition is now good. I believe that the removal of a tumor of this kind, where it can not be brought down and removed through the vagina, can be accomplished better by the abdominal than by the sacral method, which necessitates extensive operating on the soft parts and bones and is attended by considerable hæmorrhage.

The third case was an encapsulated spindle-celled sarcoma situated behind the rectum in the concavity of the sacrum. The tumor was six to eight centimetres in diameter and twenty-nine centimetres in circumference, completely filled the small pelvis, and caused compression of the rectum, so that at last defecation became practically impossible. The tumor was removed after temporary resection of the sacrum. A fistulous opening at the place of division of the sacrum persisted for two months, when it healed, all the functions were re-established, and the patient is well to-day. This post-rectal tumor could not have been removed in any other way.

Benignant and limited malignant growths in the sacral half of the small pelvis can be judiciously removed, not by Kraskè's operation, but by temporary resection of the sacrum. I agree fully with Dr. Senn that temporary resection, or the sacral operation, is serious and should not be undertaken when other means of access are possible; and, furthermore, that this severe preparatory operation adds considerably to the danger for the patient with high carcinoma of the rectum and infiltration of the glands, and that an operation of this

severity is more than the patient can bear, and that this fact must be taken into consideration in deciding between extirpation of a high carcinoma and colotomy.

DR. HENRY T. BYFORD: I approve of all Dr. Senn has said. The conservative side of this question is too often neglected. The sacral method of operation should be almost universally disregarded in the treatment of cancer of the uterus, for it is more dangerous than vaginal hysterectomy, and when the disease has extended beyond the uterus the patient is certain to die within a few months. I think the sacral method is useful in gynæcology for the removal of pelvic growths that can not be safely extirpated from above or through the vagina without removing the uterus. Some dermoid tumors which are wedged tightly in the pelvis and are firmly adherent can not be removed from above without enormous mortality, as they can not be satisfactorily enucleated. With enucleation portions of the tumors remain in the pelvis in a disorganized condition, and sepsis and death frequently follow. These cases can be operated upon from below, through the sacral incision, without removing the uterus and the other ovary. Two such cases have been mentioned to-night, in which a fistula resulted, and the sacral method proved successful. Recently a patient with a tumor of this character came to the hospital for operation, but as I could not operate on her for a week she left the hospital. I have since heard that she was operated upon and died. She might have recovered had the tumor been enucleated or scooped out by the sacral method and the cavity packed with gauze.

DR. L. L. MCARTHUR: I desire to say a few words on this subject, as it was the subject of my thesis for admission to this Society. Kraskè is receiving much condemnation for what he has not recommended. Dr. Bacon in his operations extirpated the lower segment of the rectum and the anus, which is not the Kraskè operation. The operation he devised was to resect the bowel and unite it by sutures, leaving the sphincters intact. Other operations should not bear his name nor should he bear the ignominy of their failures. Dr. Senn gave a wise note of warning in regard to suturing, as great delay necessarily ensues when one tries to bring ends of the bowel together that can be easily approximated. It has been my good fortune to succeed in doing this by means of the Murphy button. I placed gauze around it, and left the wound open. In one case complete union occurred, and in another case union resulted for about three fourths of the circumference of the bowel. In one case the button passed *per anum*, and in another case it passed, by using a little pressure on the rectum,

through the fistulous opening which existed on the posterior surface of the rectum. By the use of the button the loss of time incident to suturing the bowel can be avoided. In the event of partial union of the intestine an artificial anus can be easily established, if necessary, after removal of the gauze packing. At reading my thesis I suggested a new method of operation for carcinoma of the rectum in the female, and exhibited a patient upon whom I had employed this method, which consisted in an incision in the middle line of the posterior vaginal wall, circular resection of the rectum, and extension of the incision up to the tip of the coccyx, which afforded ample operating space. The amount of rectal tissue removed in this case was too great to enable me to bring the upper end of the bowel in contact with the lower; the upper end was therefore grafted into the vaginal wall. For two years and a half the woman had sufficient control of the bowel for all emergencies, but died after that time from recurrence of the disease in the pelvis.

Dr. BYRON ROBINSON: Nine years ago I witnessed operations by Czerny and Von Bergmann for the removal of cancers of the abdominal viscera, and their results were very bad. About seven years ago I witnessed like operations by Billroth which convinced me that cancer of the viscera should be let alone. In Billroth's cases the post-mortem examination would usually be made two or three days after the operation. Five years ago, when I was a pupil of Tait, I saw him open the abdomen many times, insert his finger, say "malignant," then call for needle and thread and close the wound. I thought he ought to remove some of these growths, and after watching him six months I attempted it myself. The first case was a papillomatous growth of the ovary, and the woman died ten hours afterward. Since that time I have been thoroughly convinced that a cancer once established in the viscera should be let alone.

Dr. JOSEPH B. BACON, in closing the discussion, said: I am very glad the paper has been so thoroughly discussed. Many of these sacral operations for uterine and pelvic growths are being performed in this city, yet few are brought before the medical societies, and a thorough discussion of the subject will help to put us in a position to better judge when to employ this method. After dissecting down to the organ or growth to be removed, it is to be presumed that no one would do otherwise than use a blunt instrument or the fingers for dissecting it out. Like most new methods, its priority is contested, but it has been known for ten years as Kraske's operation. The operation is not so horribly mutilating as some of you would have us be-

lieve. After the coccyx has been removed, the removal of the lateral half of the two lower sacral vertebræ is but a trivial addition to the operation; the bone wound is no greater than that of a fractured radius.

The percentage of mortality following this method, if performed only for the removal of small growths confined to the uterus and appendages, would, I think, be as low as that of the vaginal method. It has not been advocated except for those desperate conditions where the growth would be classed as inoperable by other less severe methods.

Theoretically the modification of Kraskè's operation, where a bone flap is made, the rectal cancer or stricture excised, the two ends of the gut reunited, the flap replaced, and the sphincter left intact, is ideal. But, so far as I have been able to trace these cases in practice, all have resulted disastrously. Those patients who did not die from sepsis, after a time developed a stricture at the point of union, where the circular cicatrix, acting as a center of irritation, caused new fibrous tissue formation around the cicatrix and gradual contraction. End-to-end anastomosis of the rectum is a failure for this reason.

OBSERVATIONS ON THE PERITONÆUM IN TWENTY-FIVE AUTOPSIES.

BY BYRON ROBINSON, M. D.

Dr. Robinson said that these autopsies were performed consecutively, without selection, in Cook County Hospital. The purpose of the examinations was to observe the condition of the peritonæum in various regions. Seventeen of the autopsies were made on males and eight on females. All of the subjects were between twenty-four and sixty-five years of age.

The omentum covered the cæcum in three cases. In eighteen cases it extended into the pelvis and could be drawn through the inguinal and femoral orifices. In seven cases it was found rolled up above and behind the transverse colon. In one case it was found in the sac of a femoral hernia. The rolling-up of the omentum behind and above the transverse colon, not covering the cæcum, is probably due to repeated distention of the large bowel by gas.

The small intestines occupied the left side of the body in an irregular outline. Their length from the lower end of the duodenum to the cæcum was measured fourteen times and gave an average length

of twenty and two sevenths feet. The shortest measurement was ten and one half feet and the longest twenty-six feet. The small bowel varies more than one half its average length. The length of the small bowel in adults does not vary with age, height, or weight.

The mesentery measured on the average, in thirteen cases, six and one half inches—exactly the average measurement of the mesentery I obtained some years ago in the Toledo Medical College. The small bowel would herniate in twenty-four out of twenty-five cadavers. The peritonæum of the small bowel is the region most susceptible to inflammation.

The position of the cæcum was recorded in twenty-four cases. Eleven times it lay to the right of the psoas muscle; seven times on the psoas muscle; six times it hung in the pelvis. Three had not fully descended into the iliac fossa, two of which were distinctly adherent. In these cases generally the ileum extended up the psoas muscle to meet the partially descended cæcum. Fourteen were asymmetrical and four symmetrical. Five were of the foetal and two of the atrophic type. In eleven cases the cæcum could be made to herniate. In many cases the cæcum was so freely movable that it could touch every organ in the abdomen and would herniate on both sides through the femoral and inguinal orifices. The cæcum was entirely covered by peritonæum in every case.

The appendix was measured twenty-four times and averaged three and one half inches in length. The shortest appendix was one and one half and the longest seven and one half inches. In the twenty-five subjects seven appendices—over thirty per cent.—hung in the pelvis. Of these three were females and four were males. In seven cases the appendix had a mesentery; the other eight were not observed. One appendix in a female subject just hung over the pelvic brim. Eight appendices hung in the pelvis, fifteen were in the iliac fossa to the right of the psoas and on the psoas, and two ran parallel to the ilium, at about the level of the pelvic brim, along the anterior surface of the sacral promontory. The appendix pointed toward the spleen nine times, toward the liver seven times, toward the iliac fossa three times, and toward the right pelvic wall once. The other five cases were not recorded.

The longest descending colon was ten, the shortest six inches; average length, eight inches. A mesentery to the descending colon is of very rare occurrence.

The ascending colon was measured twenty-two times, and its average length was six and one half inches. The longest was nine and

the shortest three inches. The mesentery of the ascending colon was present in five out of twenty-one subjects. The mesentery was extensive in four subjects, and in one measured, on the ascending colon, six inches.

The transverse colon was measured fifteen times and its average length was twenty-three inches. The longest transverse colon was forty-two and the shortest thirteen inches. The mesentery of the transverse colon was measured only four times and its average length was four and one half inches. The longest U-shaped tubes of the transverse colon reached below the crest of the ilium in three cases only.

The sigmoid was measured in twenty-one subjects and its average length was sixteen inches. The longest was twenty-four and the shortest six inches. The sigmoid mesentery was measured thirteen times and its average length was four inches. The longest mesentery was ten and the shortest two inches. The sigmoid was measured from the point where the bowel crosses the psoas muscle to the point where it lost its mesentery—that is, at the third sacral vertebra.

The special interest in these autopsies lies in the observation of the regions of local peritonitis. Peritonitis is a life-saving process; infection destroys. Peritonitis is Nature's method of repair; infection destroys the integrity of structure and function. Peritonitis tends to save life; infection kills. Peritonitis produces an exudate which buries the invading enemy so that it can not contaminate the surrounding viscera. All peritonitis begins locally. Only one body, a male aged thirty (Case 16), was free from local peritonitis. A noteworthy factor in peritonitis is the omentum, which is the final structure produced by elongation of the posterior mesogaster. The omentum has a tendency to move to points of peritoneal inflammation. This is, in my opinion, due to three forces: (*a*) paralysis at the point of inflammation; (*b*) active visceral rhythm distant from the infected point, tending to force the omentum to it; and (*c*) a sticky exudate at the infected locality. When infection enters at any point of the peritonæum the omentum stands, like a man-of-war, ready at a moment's notice to sail to the post of the invading enemy. The omentum stands guard over the portals of the peritonæum. The omentum is the patient's peritoneal protector. It stops invading enemies, successfully plugs leaking viscera, and occludes perforations. The omentum is the surgeon's friend. It circumscribes the mischief his hands have wrought, it prevents pus from invading healthy organs. It builds barriers of exudate over which infection can not

mount. It keeps the bowels from adhering to the anterior abdominal wall.

In these autopsies the study of the local peritonitis demonstrated the following points where peritonitis begins; these I shall term landmarks of peritonitis, major and minor.

First, there are three great regions very susceptible to peritonitis. It is so common in these regions that the abdominal surgeon almost unconsciously examines them immediately on opening the abdomen. It is in these districts that abdominal surgery has made its great progress, its most brilliant successes and most dismal failures.

The three major regions are the pelvis, appendix, and gall bladder. In eight female cadavers pelvic peritonitis had occurred in four. Two males in seventeen cases showed pelvic peritonitis around the vesiculæ seminales. In the twenty-five subjects peritonitis was present in the cæco-appendicular region in eighty per cent. Peritonitis in the region of the gall bladder was present in sixty per cent. of the subjects. The percentage of appendicitis in the three major regions was: appendicular, eighty per cent. ; pelvic, thirty-one per cent. (fifty per cent. in females); and gall bladder, sixty per cent. These figures no doubt appear high, but when the existence of an adhesion was questionable the judgment of Dr. La Count or that of the head interne was obtained and recorded.

Before further discussion of these three regions of peritonitis I wish to record among the minor regions of peritonitis the sigmoid mesentery as it crosses the psoas muscle. In the twenty-five cases sixty-six per cent. of peritonitis occurred in the sigmoid mesentery. Hence I wish to discuss inflammation of the sigmoid mesentery with the inflammations about the cæcum. The percentage of pelvic peritonitis in the female is not a fair estimate of its frequency, as the number of observations were so few. Each subject showed distinctly that the peritonitis started from the fimbriated ends of the Fallopian tubes. The body of the uterus was in most cases free from adhesions. Peritonitis does not spread from the pelvis to the small intestine, because of the pendent position of the pelvic floor, because of the circumscribed bony box, because intestinal peristalsis is limited in the pelvis, and because the pelvic peritonæum has learned from ages of experience to tolerate infection. The peritonitis observed around the vesiculæ seminales was due, no doubt, to gonorrhœa. I showed five years ago in the Toledo Medical College, by microscopical examinations, that such cases were gonorrhœal. In these cases the seminal sacs are irregular, sacculated. Persistent gonorrhœal inflammation makes the vesiculæ seminales feel like a boggy mass.

The autopsies showed that when a tube allows septic matter to pass out, its fimbriated end generally lies on the pelvic floor, for here the chief adhesions were found. This is due to the fact that the tubes are heavy before the deposit of the infectious matter. Even in nulliparæ, whose pelvic organs are suspended high, the ampulla of the tube will frequently descend, leaving the other organs in position.

The frequency of peritoneal adhesions in the cæco-appendicular and sigmoid regions has occupied my attention for some time, and I have concluded :

1. All the peritoneal adhesions in the cæco-appendicular regions are not due to the appendix.

2. Similar adhesions are as frequently found under the sigmoid flexure.

3. The chief peritoneal adhesions occur on both sides over the psoas and iliacus muscles.

4. These peritoneal adhesions are due to irritation produced by the contraction and relaxation of the psoas and iliacus muscles.

5. The adhesions in the large majority of cases are benign, but may become malignant.

6. The cæcum is frequently surrounded with adhesions while the appendix is absolutely free. It may be said that the appendix was once in the location of the old adhesions, but the appendix in none of the subjects showed a trace of adhesion.

In the eighty per cent. of adhesions found about the cæco-appendicular region about fifty-five per cent. were cæcal and twenty per cent. appendicular. In the sixty-six per cent. of peritoneal adhesions over the psoas muscle a close inspection revealed that in almost every case the adhesions were confined to the area which came within the range of action of the psoas and iliacus muscles. The irritation of these muscles had caused an exudate to appear on both sides of the body in sixty per cent. of the subjects.

My examination of new-born children and infants under one year has revealed no adhesions in these two regions. In several examinations of children no exudate was found under the sigmoid or around the cæcum ; hence these exudates are a product of adult life, due to irritation and caused by contraction and relaxation of the psoas and iliacus muscles.

Another reason that induced me to investigate this subject was that at the hepatic and splenic flexures it was easy to explain irritation by foreign bodies causing abrasion of the mucous membrane at the sharp flexures. There is no real flexure in the sigmoid except

where it turns to cross the psoas muscle, and the adhesions do not occur at this point but over the muscles.

The activity of the psoas and iliacus muscles accounts for some exudations, adhesions, strictures, and malignant growths found in the ileo-cæcal and sigmoid regions.

Investigation showed that the adhesions occurred on the inferior surface of the sigmoid mesentery, where the psoas has the greatest range of motion. The irritation of the psoas muscles induced not only exudation, but also organization of the exudates into bands. I place the sigmoid region in the minor class, because peritonitis at this point is benign in character.

The cæco-appendicular region offers the following instructive lessons to the surgeon :

1. The mobile cæcum will herniate or move to almost any part of the abdomen, taking the appendix with it.

2. The cæcum in twenty-five per cent. of the subjects hung in the pelvis with the appendix. Both these conditions complicate pelvic diseases.

3. The non-descent of the cæcum (with its appendix).

4. Excessive development of the cæcum, which causes it to hang in the pelvis.

5. The arrest of development of the cæcum is due to peritonitic adhesions. The rotation of the great intestinal loop is interfered with by inflammation and the loop fixed by peritonitic bands.

The spleen was observed in fourteen of the subjects, and fifty-six per cent. of them showed perisplénitis. The causes which I assign for this condition are :

1. The proximity of the splenic flexure to the colon. It is common to observe peritonitis around the splenic flexure, because as the hardened fæces, containing sharp foreign bodies, pass around the sharp angle of the gut, the mucous membrane is abraded and infection passes through the bowel wall to the serous membrane, creating peritonitis.

2. Irritation from dilatation and contraction of the stomach in conjunction with other disturbances.

3. The irritation from continued motion of the diaphragm, added to existing irritation.*

* Dr. Waite and myself have performed twenty-two post mortems, not including the above, on adults over twenty-five years of age, and found in about fifty per cent. of the subjects peritonitic adhesions around the gall bladder.

In one subject the pylorus was adherent to the gall bladder, and a fistula existed between the bladder and the gut where a gall stone had caused ulceration and through which a probe would pass. It was common to find the hepatic flexure attached by strong, large bands to the liver while the gall bladder was entirely free from adhesions. In none of the subjects did peritoneal adhesions involve the kidney. Peritonitic bands surrounded the pylorus in some cases.

At this point I wish to call attention to a peculiar depression of fossa existing in the peritonæum which was found in some of the bodies. In several cases the gall bladder lay between a fold of peritonæum extending from the liver to the hepatic flexure of the colon. In fact the gall bladder had a distinct long mesentery on its hepatic side and on its colonic side—a sort of hepato-colic mesentery, holding in its folds the gall bladder. This large peritoneal pocket or fossa is formed by the colon and its mesentery and the hepato-renal ligament. The fossa in several subjects would admit the whole fist. It must protect from septic invasion in those cases in which the gall bladder ruptures into it. It would easily hold several ounces of pus; in two cases, however, the pocket would hold ten to twelve ounces. This peritoneal pocket has no doubt saved hundreds of patients with ruptures of gall bladder by retaining the pus, which later escapes by perforation or by incision.

I will now call attention to a point located on the outer side of the ascending colon, at the junction of the upper and middle third, in which old peritoneal adhesions were present in about five or six of the subjects. For years I had noted bands in this locality. These observations have proved to me that the peritonitic adhesions are due to irritation from respiratory movement of the lower lobe of the liver. One typical case showing extensive adhesions and a clear action of the liver on it at this point convinced me of the ætiology. In some cases a normal band was found extending from the upper portion of the colon to the parietal wall.

The hernial orifices are localities where peritonitis is apt to occur and leave old adhesions. Accidental peritonitis was discovered in various subjects, which probably occurred from perforations, pneumonia, or other causes. No distinct perforations were discovered except in the appendices which had been promptly closed by exudates and the mesentery. In many subjects I found adhesions under the great omentum. There were no visible perforations, but bacteria, their products, or some irritative processes had caused definite peritonitic adhesions.

In the following table I will present and explain the major and minor regions of peritonitis :

Landmarks of Peritonitis.

Major regions.	{	1. At the ends of the Fallopian tubes (pelvis).
	{	2. Cæco-appendicular (appendix).
	{	3. Gall bladder.
Minor regions.	{	1. Sphincters..... { (a) Pylorus.
		(b) Ileo-cæcal valve.
		(c) Anus.
	{	2. Flexures..... { (a) Hepatic flexure.
		(b) Splenic flexure.
		(c) Sigmoid flexure.
	{	3..... Hernial orifices.
	{	4..... Accidental.
	{	5..... At the seminal sacs.
	{	6..... Upper third of ascending colon.
	{	7..... Perisplenitis.

I wish to call especial attention in this investigation to the following :

1. Peritonitis is Nature's method of repair.
2. Peritonitis tends to save while infection tends to destroy life.
3. Peritonitis is a distinct local action.
4. Peritonitis has three distinctly dangerous and eleven less dangerous localities.

5. The immediate dangers of peritonitis are infection and supuration, and the remote dangers strictures, adhesions, and malignancy.

6. The presence of a mesocolon to the ascending colon is very rare, and to the descending colon is still more infrequent.

7. Peritonic adhesions occur in sixty-five per cent. of cases over the psoas muscles and under the sigmoid, and in eighty per cent. around the cæcum and appendix.

8. The non-descendant and excessive descent of the cæcum has been seldom noted by writers. The non-descent of the cæcum is due to arrest of development from intra-uterine peritonitis.

The privilege of making these autopsies was due to the courtesy of Dr. Ludvig Hektoen, pathologist to Cook County Hospital, Dr. E. La Count, his assistant, and also to the Interne.

DISCUSSION.

Dr. HENRY T. BYFORD : I recall two cases of peritonitis in the region of the sigmoid flexure, which, however, had a different cause from that mentioned by Dr. Robinson. One was due to impaction of fæces, the other followed a miscarriage with retained placenta. I examined

this patient a number of months after the miscarriage and found the ovary freely movable, not enlarged, lying low down upon the side of the pelvic wall. The broad ligament was relaxed entirely below the region mentioned. The infection must have passed from the uterus through the lymphatics without involving the ovary and tube.

Dr. NICHOLAS SENN: This paper should be discussed more fully, because there is no member of the Society who appreciates the indefatigable work of Dr. Robinson more than I. His ingenious explanation of the occurrence of peritonitis in two symmetrical localities, which he attributes to muscular action or the irritation produced by muscular action, is certainly incorrect. If I understand the modern ætiology and pathology of peritonitis, I must assume that in every case of peritonitis, localized or general, circumscribed or diffuse, a microbic infection exists, without which peritonitis is impossible. We have gone beyond the assumption that peritonitis can be produced by a trauma. If a trauma can be caused by muscular action, as is assumed in this explanation, I certainly should look for the peritonitis in another locality where the peritonæum is more intimately attached to the underlying tissues, where the muscles—as the diaphragm, for example—are constantly at work, and where there is no interruption of muscular action. Peritonitis will occur by preference in localities predisposed to the formation of the essential infecting medium. Anatomical peculiarities may predispose, but are never the direct cause of peritonitis. As peritonitis corresponds in its severity and in its extent to the character of the infection, we classify it according to its microbic cause. The most favorable form, which has been described by the author as occurring very frequently in the pelvis as the result of gonorrhœal infection, is a plastic peritonitis in which the plastic exudate walls off, as it were, the free peritoneal cavity, and consequently prevents diffusion. Fibrino-plastic peritonitis has an intrinsic tendency to spread, but without entirely losing its tendency to localization. In suppurative peritonitis there is still a tendency to localization, hence it is a more favorable form of peritonitis than that which is not characterized by any specific pathological lesions and which almost uniformly results in death in twenty-four to forty-eight hours. I believe all the different forms of peritonitis are produced by the facultative pus microbes. I do not agree with the author that the benign tendency of pelvic peritonitis is due to localization, the force of gravity tending to limit the extension of inflammatory processes, but I believe pelvic peritonitis is most frequently caused by gonorrhœal infection, hence the microbic cause determines the benignancy of the

process. Fibrino-plastic peritonitis is produced by pus microbes, usually by the staphylococcus, white or yellow. The most violent form of septic peritonitis is almost invariably the direct result of streptococcus infection. The *bacillus coli communis* is a facultative pus microbe as well as the gonococcus, and results in the most localized forms of peritonitis. Fibrino-plastic peritonitis frequently terminates in suppuration, and septic peritonitis, if the patient should live long enough, will result similarly.

I believe the two localities the author refers to contain organs peculiarly predisposed to local inflammation and furnishing the necessary infective area on the right side. It is well known that a suppurative inflammation of the appendix vermiformis frequently occurs through the lymphatics, as was so beautifully described by the late Dr. Pearson, which results in pelvic peritonitis and later in adhesions. The gall bladder is also recognized as being frequently the seat of microbic infection. The infection of the lining membrane of the gall bladder extends in a similar manner to the overlying peritonæum, as in cases of catarrhal or ulcerative appendicitis, through the peritonitis giving rise to plastic peritonitis.

I am exceedingly grateful to the author for the number of very interesting practical points in his paper, but felt it my duty to make some remarks in reference to the immediate causation and cure of the different forms of peritonitis.

Dr. BYRON ROBINSON, in closing the discussion, said: I am not satisfied that peritonitis is invariably due to microbic invasion; it may be due to mechanical irritation. In my study of peritonitis in these examinations I not only considered muscular action but also all products of inflammation. The large percentage of peritonitis in areas of muscular action is strong presumptive evidence that muscular action is a factor in the production of the inflammation. The action of adjacent muscles moves the bowel wall upon its contents, and this may wound the mucous membrane and permit infection. I did not assert that muscular action alone could cause peritonitis, but that it may act as a predisposing cause.

The literature of meso-sigmoid peritonitic adhesions dates back about seventy-five years. Virchow, Langer, Waldeyer, Treves, and others mention old inflammations in this region, but do not assign a cause for them.

The remarks of Dr. Senn are in the right direction, and I shall be glad to receive any information which may explain the pathological findings of peritonitis.

GESTATION COMPLICATED BY APPENDICEAL ABSCESS.

BY L. L. McARTHUR, M. D., CHICAGO, ILL.

Dr. McArthur said that the recent report of Dr. Paul F. Mundé, in the *Medical Record*, of a case of gestation complicated by appendicular abscess as the only case on record, leads me to report to you two similar cases which have occurred during the past year in my hospital service, and which are noteworthy because of their rarity, the great difficulty in deciding as to the best method of procedure, and the difficulty in diagnosis.

I will first give a brief history of the cases and then present for your consideration and discussion several propositions :

CASE I.—Mrs. M. C. R., a patient of Dr. West, aged thirty-one, married, multipara, pregnant four and a half months, was admitted to St. Luke's Hospital Friday, January 19, 1894. She was seen by me at 11 P. M., soon after admission, when this history was obtained : She was seized with intense pain, intermittent in character, in the right iliac region early Wednesday morning, accompanied by painful vomiting and soon followed by chill and fever. Dr. West was called, prescribed anodynes, and gave chloroform at intervals to relieve the intense pain. The bowels failed to move by enemata. She was fairly easy Wednesday afternoon. Her suffering continued Thursday and Friday, with the temperature between 101° and 103° .

On admission to the hospital, pulse was 120, small, wiry, and weak ; temperature, 133.5° ; respiration, 38° ; expression, anxious and pinched ; skin hot ; extremities cool ; abdomen prominent, not tympanitic ; uterus enlarged, extending to the umbilicus ; abdominal walls tense, with flatness on percussion over right iliac area from umbilicus to anterior spine of the ilium and from Poupart's ligament to uterus—exquisite tenderness with sense of tumefaction existed over this area ; no vaginal discharge ; cervix soft, somewhat patulous ; tenderness without marked bulging in the right vaginal vault.

Diagnosis, appendiceal abscess or ruptured tubal abscess, probably the former. Immediate operation was advised. After the usual preparations the abdominal wall was incised over point of greatest tenderness and flatness, which was about midway between umbilicus and anterior superior spine of the ilium. The peritonæum formed the anterior wall of the abscess, which was easily drained. The ab-

scell cavity was then sponged out without breaking adhesions which still shut it off from the abdominal cavity. The appendix, which was gangrenous at its middle and was free in the abscess cavity, was ligated and excised. The cavity was lined with Mikulicz's gauze pouch and the pouch carefully but loosely packed with one continuous strip of gauzes. The wound was left open and a large dressing applied. Morphine and atropine were given to quiet pain and to, if possible, prevent miscarriage. The patient was absent one hour from the ward; upon her return temperature was 102° , pulse 112, and respiration 60. Abortion of dead fœtus next morning at 10 A. M., placenta expelled an hour later. At noon temperature was 101.6° and the pulse 132. At 5 P. M. temperature was 103.6° and the pulse 150. The patient gradually sank until 3 P. M. of second day, when death occurred from general peritonitis. The patient had no puerperal sepsis.

CASE II.—Mrs. Theresa B., aged thirty-four, multipara, between four and five months pregnant, married, Hungarian, was admitted to Ward E, Michael Reese Hospital, October 11, 1894. Previous history negative, health always good. Present illness began suddenly three weeks prior to admission, with pain, vomiting, and fever. Vomiting frequent during first twenty-four hours. Pain colicky, in right inguinal and iliac regions. Constipation during early part of illness, but corrected during week preceding admission. No blood or pus had been seen in dejecta. Confined to bed from beginning of attack. Her physician had treated her for chronic inflammation of the bowels.

Upon examination the patient was found to be of average physique. Temperature 99.2° , pulse 122, respiration 26. Abdomen enlarged; uterine outline distinct, reaching to above umbilicus; tumor in right iliac region, about size of fist; tube felt through abdominal wall, with a suspicion of fluctuation to admitting physician; but Dr. Frankenthal, attending obstetrician, after examination determined an infective process unconnected with gestation, and referred patient to surgical department. Upon vaginal examination a tumor could be felt in right vaginal vault, which was tender and continuous with the tender tumor in right iliac area; urine normal; uterus normally posed.

As the diagnosis of abscess was made, and as symptoms somewhat resembling those of general septic peritonitis existed, after consultation with Drs. Banga and Frankenthal operative treatment was determined upon.

Incision over point of greatest sensitiveness and flatness on percussion. On incising peritonæum stinking pus was found free in the

iliac pelvis. The opening was therefore enlarged, and the appendix found in an agglutinated mass of intestines, forming an apparent protection above from general peritoneal cavity. The right uterine wall formed the inner part of the abscess wall. Appendix not disturbed, in order to avoid general infection. After drying out right iliac area a large Mikulicz drain was introduced and the wound partly sutured.

During the patient's stay in the hospital the wound was dressed regularly and drained freely; odor always offensive. As pains did not set in soon after drainage of abscess there seemed some hope of saving the patient. After miscarriage there was a recrudescence of the peritonitis, with extension to general peritonæum, with the usual symptoms and termination. No puerperal sepsis.

October 11, 1894, 5 P. M., temperature 99.2° , pulse 122, respiration 26. 12th: 8 A. M., 98.2° , 112, 24; 8 P. M., 103.2° , 134, 28. 13th: 9 A. M., 102.2° , 112, 28; 2 P. M., membranes ruptured, bloody discharge, vaginal douche 1:8000, pubes shaved, douche; 9 P. M., 101.5° , 120, 28. 14th: 8 A. M., 98.8° , 108, 24; 9 A. M., delivery of fœtus, presentation transverse, changed into breech, pain lasted ten minutes; 12 M., placenta delivered, no hæmorrhage; 9 P. M., 102.6° , 130, 26. 15th: 8 A. M., 101° , 120, 28; 7 P. M., 103.6° , 140, 36. 16th: 8 A. M., 102.8° , 162; 12 M., 103.4° , 180. Death.

I believe that the following propositions are tenable:

1. That the largest proportion of all cases of acute suppurative appendicitis are seen by the surgeon only forty-eight hours or more after their onset.

2. That in the great majority of such cases an abscess exists outside of the appendix, whose walls are made up of the structures which surrounded the appendix at the onset of inflammation, and which are held together by plastic lymph.

3. That profound sepsis, either medicinal or bacteriological, will sooner or later induce fœtal death and miscarriage.

4. That after the third month of gestation a portion of the wall of an appendiceal abscess is usually formed by a part of the right wall of the uterus.

If these propositions, which are logical, plausible, and I believe practical, be granted, it will be readily seen that the usual methods in vogue are neither safe nor sufficient. For example, when the appendix is removed *secundum artem*, either by the radical methods advocated and practiced by Murphy, McBurney, and Bull, or by the conservative method of simply opening the abscess cavity through the adhesions, and drainage, either the septic condition, the mechanical

interference, the anæsthetic, or all combined are certain to produce miscarriage. When this occurs that surface of the uterus which formed part of the abscess cavity changes its location to such an extent that the infective elements of the abscess lie in contact with uninfected peritoneal surfaces—that is, loops of intestine, no longer supported by the uterus, drop down against those infected coils which previously formed part of the abscess cavity, and it practically becomes impossible to prevent a general septic peritonitis.

If no operation is performed abortion will surely result, with rupture of the abscess into the general peritoneal cavity and fatal peritonitis.

If the abscess is opened and drained, with or without removal of the diseased appendix, abortion will probably occur; and although the abscess cavity no longer contains any fluid, its walls are sufficiently infective to excite peritoneal inflammation when the new relationships incident to the emptying of the enlarged uterus have been established.

From the standpoint of the general surgeon at least, it would therefore be best, after treating the appendiceal abscess by that method which, in the opinion of the operator, seemed most appropriate, and before closing the abdominal wound, to empty the uterus in order to establish the relations of the structures concerned in the inflammatory process which we desire to maintain after closure of the abdominal wound.

Since whether we operate or not there is very little hope of saving the life of the child, I would ask if it does not seem more rational to use all means to save the mother, even to the extent of scientific abortion, rather than to endanger her life by insecure conservatism.

In conclusion, let me submit the following case for probable diagnosis and suggestions as to treatment :

A young woman, aged about twenty-three, unipara, of good family history, who had never been ill with the exception of a monarticular rheumatism three years previously, who was four and a half months' pregnant complicated by cystitis, suddenly developed, after a long railway journey and a week of malaise, a temperature of 105° with general abdominal pain and vomiting. The pain was at first localized in the epigastric area, but after the second day was most marked in the right iliac area, with chilly sensations. The pain continued for a week, and the temperature varied between 103° and 105° , sometimes higher in the morning, sometimes in the evening. Her condition on the eighth day was as follows: Temperature 105.3° ; the uterus reached to umbilicus and was not easily movable laterally; the right

iliac area was flat on percussion throughout, from umbilicus to spine and from Poupart's ligament to the uterine body. Distinct tumefaction could be felt, but could not be clearly defined from the uterus; great tenderness on palpation; no tumefaction in vaginal vault; rectal examination negative. The cervix was very soft; the canal somewhat patulous, not tender; no uterine or vaginal discharge. Typhoid and rheumatism were excluded. There was a possibility of pyosalpinx. Antirheumatic remedies were tried, but did not affect the temperature.

What was the diagnosis? What should have been the treatment?

DISCUSSION.

Dr. J. C. HOAG: I desire to cite a case which recently came under my care. The patient was a young married woman who had appendicitis. The symptoms became milder and the surgeon did not deem it best to operate. Shortly afterward, before the pain had entirely left the region of the appendix, she became pregnant. I saw her from time to time, and although she still complained of more or less pain in this region, it was not like the pain she had had from the appendicitis, but rather a pain caused by foetal movements. A week ago she was delivered at full term of a healthy child. She is now entirely free from pain in the region of the appendix. I have palpated and percussed repeatedly and find no induration or dullness.

Dr. HENRY T. BYFORD: As Dr. Hoag has said, it is not always necessary to operate. The question would be whether to operate at once or to wait for symptoms of general peritonitis which might not occur. Judging from Dr. McArthur's results, I would say that if an operation is done it ought to be radical. There is no use in packing if the uterus is going to draw away from the packing. When the uterus forms a portion of the abscess wall it might be better to amputate the appendix, to remove the entire abscess excepting the portion formed by the uterine wall, which should be curetted, and to evacuate the uterus.

I think that in operating during pregnancy where there are adhesions to the uterus abortion will almost invariably result. If the uterus is not molested it does not matter what is done in the abdominal cavity, if asepsis is maintained.

Dr. FERNAND HENROTIN: I had no intention of saying anything, but the remarks of Dr. Byford make it almost imperative for me to do so. I wonder if the gentlemen who are thinking of doing radical and early operations consider how many, even severe, cases of appendicitis recover without operation? To operate under the conditions

described by the essayist the symptoms must be such as absolutely portend dissolution. The enormous mortality following operation in such cases, and the fact that in all acute septic diseases the induction of abortion in itself is so frequently followed by fatal results, seem to me to furnish preponderant evidence in the direction of non-operative interference, no matter how high the temperature, how fast the pulse, or how bad the symptoms. Frequently when the patient is almost moribund a sudden evacuation of pus will take place through the bowels. I do not intend this as a direct answer to Dr. McArthur's questions, but refer in general to those cases of appendicitis complicating pregnancy.

Dr. F. A. STAHL: I think, under the conditions given by Dr. McArthur, if the diagnosis be positive the abscess should be evacuated and drained. The effect produced by operative procedures during pregnancy, especially up to and including the third month, is such that the most serious operations can frequently be done without producing abortion. When there is a pus cavity adherent to the uterus, and when the inflammatory process involves the uterus abortion will often follow the operation. With these conditions the advisability of emptying the uterus at the time of operation depends wholly upon the case.

I remember assisting Von Winckel in a supravaginal amputation of a carcinomatous cervix by knife and Paquelin cautery, in a patient ten weeks pregnant. She did not abort. I mention this case as an example of the tolerance of the pregnant uterus to operative procedures. I would answer Dr. McArthur's query by saying that I would first use *expectant* treatment. If, after careful observation, I believed that the pregnancy tended to hinder recovery, I would induce labor. In many cases, however, I believe recovery will take place without interrupting the pregnancy.

Dr. H. P. NEWMAN: I would like to suggest the possibility of a mistake in diagnosis. A case recently came under my observation, which had been seen by two of the gentlemen present, in which appendicitis was diagnosed in a woman five months pregnant and operative measures suggested. Upon further examination of the case it was considered that the tumor at the right of the uterus might not be appendicitis, and operation was deferred. The woman went to full term and has now fully recovered. At delivery it was ascertained that the tumor which was supposed to have formed about the appendix was simply a uterine fibroid.

Dr. J. T. BINKLEY: During the last eighteen months I have seen

thirty or forty cases of appendicitis. Half a dozen or more of these cases Dr. McArthur and I have seen together, and in every instance in which the abdomen was opened for appendicitis there was an abscess cavity, which was drained and cure resulted. In every case, with one exception, where interference was carried to the extent of delivering the appendix or hunting for it the patient died. I can hardly see how a man can diagnose appendiceal abscess and justify himself in leaving it alone. The line of procedure Dr. McArthur carried out was that which any careful and conservative man would have pursued.

Dr. McArthur's cases had progressed until general infection existed, and probably the lymphatics of the uterus were filled with toxins, which excited the sympathetic ganglia and resulted in abortion.

Dr. L. L. McARTHUR, in closing the discussion, said: The object of this paper was to decide a question which is apt to confront any physician at any time, and to formulate a plan of action. In a case of distinct abscess, as large as the fist, to the right of the uterus, in a woman four and a half months pregnant, with a temperature of 103° to 104° , rapid pulse and symptoms of sepsis, should this abscess be simply drained or should it be let alone? Should the appendix be removed and drainage instituted, or should the patient be trusted to Divine Providence, as has been suggested?

It is natural to expect that with profound sepsis, and an appendiceal abscess so large as to press against the side of the womb irritation enough will be produced to produce abortion. In the second case the abscess had been watched carefully for three weeks, hoping that operative interference would be unnecessary. Upon examination when the patient came to the hospital immediate operation seemed necessary, not in my opinion alone, but in that of the entire surgical and gynecological staff of Michael Reese Hospital. In this case, possibly transportation to the hospital, possibly uterine contractions, had ruptured the abscess cavity. If in such cases operation is not made the abscess will be ruptured by uterine contractions. If operation is done the general peritoneal cavity will be reinfected when the abortion takes place. Therefore would it not be better, after having opened the abscess, drained, and packed, before closing the abdominal wound to empty the uterine cavity and thus give the patient a possible chance for life?

In all these cases there was no puerperal septicæmia. It is possible for an appendiceal abscess complicating pregnancy not to involve the uterus, and in such a case abortion might occur without rupture

of the abscess. Perhaps this was what occurred in Dr. Mundé's case, in which the woman aborted and a week later the abscess was opened. In his case no general peritonitis followed the abortion.

No undue manipulation was made to remove the appendix. I believe it practically criminal to hunt for an appendix in a pus cavity surrounding it, simply for the purpose of making a radical cure at that time; when such radical cure can be made so much more safely, if necessary, after all suppurative inflammatory processes have subsided; for, out of sixty-eight cases of simple drainage of appendiceal abscesses without removal of the appendix in my care, sixty-six have got well.

Dr. HENROTIN: If the pains are coming on and the woman is about to abort, why not abort the woman first instead of opening the abscess first and producing an abortion afterward?

Dr. McARTHUR: The aborting will open the abscess and spread the contents all over the peritoneal cavity. I related a case which I thought exactly resembled a case of appendicitis, in a woman five and a half months pregnant. The diagnosis was confirmed by two members of this Society. An incision was made and a normal appendix and normal tube were found. The case was one of gestation which had probably begun in the right cornu of the uterus, causing sacculation of the uterus, the right side filling out the entire iliac fossa. The temperature varied between 103° and 105.5° and persisted for more than a week. The patient became very ill, had chills, and all four of the physicians present agreed that exploratory incision should be made. The next day there was abortion of a macerated foetus. Probably the long railroad journey, which induced nausea, caused the death of the foetus, and the latter the high temperature. The patient recovered.

Dr. H. P. NEWMAN: I do not think the essayist has any right to infer what my treatment would be. I was speaking only of the subject of diagnosis, but, that being made, I would act in accordance with the surgery of the present day, empty the pus cavity, and if necessary produce abortion.

THE STATUS OF GYNÆCOLOGY ABROAD.

BY HIRAM N. VINEBERG, M. D.

The Present Conception of Hysteria.

P. J. MOBIUS (*Monatssch. für Geb. und Gyn.*, January, 1895) gives credit to the French school, and notably to Charcot and his pupils, for our knowledge of hysteria. The phenomena of this affection are usually divided into the attacks and the permanent symptoms, or "stigmata." Particularly marked in the latter is the hysterical anæsthesia and its psychical nature. The hysterical anæsthesia and the concentric contraction of the field of vision differ from that caused by organic disease. The patients so afflicted do not stumble and knock up against things as they would if an organic lesion were the cause of the symptoms. Succinctly stated, the anæsthetic patient feels but does not know it. A few clear examples illustrating the author's meaning are stated. The hysterical stigmata are similar to the anæsthesia. For instance, the paralysis following emotional excitement does not possess the characters due to an organic lesion. The paralysis consists in an inability to use the muscles purposively, though the power is retained. A patient suffering from hysterical paraplegia can move the limbs vigorously in bed but is unable to stand or walk. To this form of paralysis belongs the so-called "astasié-abasie." The hysterical phenomena stand in close relationship to the phenomena produced by hypnotic suggestion. Here also the starting point is the imagination, whether the suggestion comes from within or without, that is from the person himself or some one else. Here also the symptoms even vanish as suddenly through the imagination as they have been evoked by it.

Experience teaches us that in the majority of cases the hysterical are abnormal from birth, that they belong to the hereditary degenerative class. Hysterical mothers have hysterical daughters. In other cases some other form of degeneration may be traced in the parents. The hereditary origin of hysteria, its close connection with other forms of degeneration, accounts for the fact that often connected with hysteria can be found other symptoms of degeneration—for instance, a tendency to steal, mendacity, cruelty, sexual immorality, etc.

The author does not believe in acquired hysteria, although in some cases no hereditary taint can be found, and the person may reach a ripe age without showing signs of the affection. In these

cases it deals usually with a traumatic hysteria. But the traumatism is merely the exciting cause. The predisposition must exist, and consists in a certain degree of degeneration. The degeneration, however, may be acquired through the infectious diseases (typhoid fever, abuse of alcohol, long-continued excitement). According to this conception, diseases of the female generative organs may be the exciting causes. The attendant pain, and other disturbances, fever, and the loss of secretions may weaken the organism, and with it the brain. But often the *modus operandi* is different. In woman, much more than in man, the sexual life forms the center point of existence. Hence every disease of the sexual organs disturbs in a high degree her nervous system. To this must be added the suggestion coming from relatives, friends, and particularly from the physician. Finally the local affection causes the woman to be hysterical, not directly, but through care and anxiety. But much oftener the local affection, be it an endometritis or something else, has no connection whatever with the existing hysteria, and it is only the attendant physician who finds the relationship. The assumption that hysterical phenomena follow no laws is false; they do follow laws (psychological), but different from that of other diseases. It is senseless also to say that hysteria is limited to the female sex. Marie even went so far as to say that it was more frequent among males than among females. But he gathered his material from the lowest classes in Paris, among whom drunkards, vagabonds, and erratic persons are found in large numbers. Still, so far, it is true that hysteria in the male is not uncommon, and that the disproportion between the two sexes is not so great as is commonly supposed. Worthy of notice is the relationship of hysteria to age. Boys and girls are often afflicted with hysteria, the female sex being in preponderance here also, but less so than in adult life. The hysteria of childhood is so far benign that the disease often vanishes rapidly of itself. On the other hand, it must not be forgotten that the earlier the hysteria appears, the greater must be the inheritance, and the greater the caution to be exercised in giving a prognosis. The blossoming period of life is also the blossoming period of hysteria. It is at this period particularly that one finds the classical hysteria of the female with its treasure of symptoms and their rapid interchange.

In the treatment of hysteria two things must be differentiated: First, to remove everything which may favor the disease, to strengthen the organism when it is weakened, to regulate the mode of life, and to combat abuses; secondly, to attack the symptoms directly *a priori*

and *a posteriori*—that is, in accordance with our conception of hysteria; and in accordance with our experience only moral influences can come into play. That which is evoked by suggestion is removable by suggestion. In addition to the suggestion used in the hypnotic and awake state, we have at our command the masked form—that is, the application of a remedial agent which apparently acts in a physical manner, but virtually plays on the imagination. To this class, together with medicaments, baths, electricity, etc., belong gynæcological treatment, in so far that one does not expect from it a local effect, but a relief of the hysterical symptoms. On the one hand, gynæcological treatment has undoubtedly a powerful suggestive effect; but on the other hand, more than any other form of treatment, it is a double-edged sword, in so far that not only a favorable, but equally as well, an injurious suggestion may be evoked by it; and it is not always in the power of the physician to check the one and nurture the other. Hence it is a good rule to formulate, that “a gynæcological examination or treatment should not be instituted unless there be a *bona fide* local indication.” Every thoughtful gynæcologist now condemns the shameful abuse to which castration and other operative interference have been carried in the absence of any local indication.

[We need scarcely apologize for having given so lengthy an abstract of the foregoing valuable article from the pen of one of the foremost neurologists in Germany. We have done so because we have seldom seen a paper which treated the subject in so succinct, clear, and thoughtful a manner, and because we think the gynæcologist in particular must feel a lively interest in the functional nervous disorders to which women are so prone.]

Conception through an Accessory Tubal Ostium. Cæsarean Section on account of a Prior Ectopic Gestation.

Prof. M. SAENGER (*ibid.*) reports a case which is characterized by the two following interesting features :

1. The unusual mode of conception.
2. The unusual indication for Cæsarean section.

The patient, aged thirty-two years, had given birth to three children, the last one eight years before. Had aborted twice between the births of these children. Two years ago she believed she had again aborted at the third month. She had very severe pain in the right groin, accompanied by fainting spells and vomiting. There was discharge of blood for a considerable time afterward, but no decidua nor fœtus came away. She was confined to her bed for eight months,

on account—as her physician stated—of a copious blood effusion into the peritoneal cavity. The patient went into labor at about the right time, but no progress was observed after twelve hours of severe pains, owing to an obstruction caused by a hard cicatricial ring around the cervix. Saenger performed a Cæsarean section, and delivered a child which was readily resuscitated. He found that the other abdominal end of the right tube was lost in a hard exudate in Douglas' sac. The right ovary was not to be found. In the bottom of Douglas' sac a firmly adherent tumor, the size of a closed fist, was found, which was the shrunken foetal sac. The abdominal end of the left tube lost itself also in the exudate behind the uterus. At about the center of the free border of the tube, some seven centimetres distant from the left horn of the uterus, was a well-marked tubal ostium with a rosette the size of a fifty-cent piece. Close under this, crossed by some fine adhesions, lay the elongated left tube. On the conclusion of the exploration the uterus was returned within the abdomen, and the abdominal wound closed in the usual way. The patient made a satisfactory recovery.

From the foregoing it is seen that the woman had an ectopic gestation two years before, with a long hæmatocele, and that the last conception could only have taken place through the accessory tubal ostium.

Perforation of the Uterus through Curettage, with Prolapsus and Imprisoning of the Intestines.

Dr. ALBERTI (*Cent. für Gyn.*, 1894, No. 39) reports the following case: A woman, aged thirty-two years, had presumably aborted at about the sixth week, but, as the hæmorrhage continued, the attendant physician undertook a curettage with Roux's spoon. He made a couple of careful scrapings, and then passed a polypus forceps to remove any decidual remains. The seized tissue, on being drawn out, proved to be a coil of the small intestine. Not a drop of blood escaped, but the patient complained of nausea and syncope. The physician made no attempt at reposition, but placed a tampon of iodoform gauze about the intestines in the vagina, and had the patient transferred to the hospital. The subsequent cœliotomy revealed that the loop of intestine escaped through a rent, four centimetres long, in the right angle of the uterus. The loop was firmly wedged in the rent, and could not be withdrawn without some difficulty. There was a small tear in the mesentery, which was sewn. The coil of intestine was drawn out through the abdominal incision

and washed off with a three-per-cent. saline solution. Not a drop of blood escaped from the uterine tear after the withdrawal of the intestines. The muscular tissue of the uterus was very lax, had a waxy appearance, and was so very thin that the interrupted sutures tore through.

Alberti then passed four Lembert's sutures over the tear, and then closed it over with a fold of the right broad ligament. The patient had fever for the first two days, and a rapid pulse for several days. Four weeks later she had a profuse uterine hæmorrhage, and another a week later. The latter could not be arrested until a thorough curettage was done. Intra-uterine injections of tincture of iodine were repeated three times afterward, after which the hæmorrhage ceased, and the patient has been well since.

Symptomatology and Prognosis of Sarcoma of the Ovaries.

Dr. L. PICK (*ibid.*) reports two cases in girls of eighteen and sixteen years respectively. The second case was complicated by a unilateral congestive papilla (*Stauungspapille*). Both patients recovered and were well a year and six months respectively after the operation. Since 1886, when Olshausen wrote the well-known article on sarcoma of the ovaries,* the author has been able to collect twenty-three cases. In twelve cases sarcoma was of the round-cell variety. Ten of the patients were under twenty years, confirming Olshausen's statement that it is a disease of early life. Doran reported a case of round-cell sarcoma in a seven-months fœtus. In nine cases it was bilateral. Olshausen's statistics gave eight in twenty-nine cases. It is worthy of notice that in the nine cases of bilateral sarcoma of the ovaries the round-cell variety occurred in six. The duration and course vary considerably; from a few months to several years may elapse from the onset of symptoms and the time of operation. Ascites and adhesions may be absent even when the growth has reached colossal dimensions, as in the author's first case. Regarding the diagnosis, nothing new was brought out by the histories of the later cases. Olshausen gives amenorrhœa as an early symptom. This occurred, sooner or later, in the author's collection, but the menstruation has even been copious in a few reported cases. The prognosis is stated differently by different authors. These growths, according to Olshausen, are relatively of slight malignancy, and seldom cause metastases. But the round-cell variety of the two is the more likely to be attended

* Billroth-Luecke's *Handbuch der Frauenkrankheiten*, Bd. ii.

with metastases. In a more recent work * Olshausen states that the round-cell sarcoma is invariably malignant in contradistinction to the more common fibrosarcoma, which is usually benign. Pick sums up as follows :

1. The prognosis of ovarian sarcoma of whatever variety is more grave when the disease is bilateral.
2. Round-cell sarcoma occurs preponderately in both ovaries—that is, in a malignant form. When it occurs unilaterally, it may be very benign ; certainly not more malignant than the unilateral spindle-cell sarcoma.
3. Ovarian sarcomatous growths in young persons show a strong tendency to be of the round-cell variety.
4. Round-cell sarcoma of the ovary has a strong disposition to occur in young individuals.

The Operative Treatment of Destruction of the Urethra complicated with Vesico-vaginal Fistula.

Dr. D. V. OTT (*Centbl. für Gyn.*, 1894, No. 40) describes the following case and the technique followed :

A young woman after a difficult labor sustained an immense defect in the vesico-vaginal septum, a *restitutio ad integrum* of which was impossible. There was not anything left of the urethra save a narrow bridge from three to four millimetres wide near the meatus. In addition there were to be seen evidences of former unsuccessful attempts at closure, as the patient had been an inmate of several hospitals. With these conditions the only course that seemed feasible was closing the vagina and making an artificial recto-vaginal fistula. Recognizing the disadvantages of such a result the author devised a different method of treatment. He closed the vaginal outlet in the usual way, but extended the denudation upward along the labia minora to the clitoris, forming in this way an artificial urethra. The denudation was in the form of a horseshoe, the middle part embracing the posterior commissure, and the two sides the labia minora to the clitoris. The portion of the skin between the two sides of the denudation from the region of the urethral meatus to the glans clitoris was left intact. This was about a centimetre in extent, and was destined to form the inner wall of the new urethra. The two halves were then united by symmetrically applied sutures (kolpo-episkleisis), and in the upper part a small canal was formed which would

* *Zeitung für Geburt. und Gynäk.*, 1893, Bd. xxvii, pp. 256, 257.

admit a fine uterine sound. To accomplish a more perfect union, two sets of sutures were applied, one set consisting of deep sutures of fine silk passed in the denudation from one to two millimetres from the border, and one set consisting of the usual sutures. The result was as follows: Primary union of the wound, and the patient gained the power to retain the urine voluntarily for several hours; occasionally a whole night would elapse without a desire to urinate. A second case of congenital defect of the urethra was operated upon with success on the same principle. In this instance the horseshoe denudation was made to embrace only the region of the urethra, and the normal lumen of the vagina was retained. The principle of the operation is similar to that followed in complete laceration of the perinæum.

[This case of Dr. Ott's is not so instructive to American gynæcologists as it should be to our German brethren. Dr. Emmet was the first to operate on such a case successfully and has reported cases so cured as far back as 1862. He has performed this operation many times and claims that all cases may be cured in which any portion at all of the urethral tissue is left, even though the loss of tissue may extend completely from the cervix to the site of the meatus urinarius.

Dr. Ott deserves great credit for putting this principle into practice so successfully, but he has devised nothing new; for not only is the method he followed given in detail in Emmet's book, *Vesicovaginal Fistula*, published in 1868, in which a number of such cases are cited, but the same method is fully described in Chapter XXXIII in a German translation of his book *The Principles and Practice of Gynæcology*, published in Leipzig by Ambr. Abel in 1881.—EDITOR.]

PÆDIATRICS.

Tetanus Neonatorum.

KLEINER, M. (*Gross Med. College Bulletin*), reports two interesting cases of this disease. The patients were twins, colored, male and female. The labor was fairly rapid, delivery normal—children small but well nourished. The usual antiseptic precautions were observed during and after labor. On the *fifth* day the male child became unable to nurse and in twelve hours developed well-marked tetanus. The umbilicus showed nothing abnormal, was dressed antiseptically and the

child was removed from the mother and isolated. During the next four days the child emaciated rapidly and gradually grew worse, notwithstanding active treatment with chloral, physostigma, bromides, coal-tar derivatives combined with hot baths, enemata of pancreatinized milk, etc. And the mother insisting, the child was returned to her. Up to this time the mother and the other child had been doing well and had showed no symptoms of the disease, but by the next day the disease began in the other child and by night was fully established. As in the other case, the umbilicus showed no signs of infection. Stump off and surface dry. Both children were then treated by subcutaneous injections of a normal sterilized saline solution, two ounces being injected at one time and alternating every three hours with a hypodermic of a four hundredth of a grain of hydrobromide of hyoscine. By this means it was hoped, not only to combat the rapid emaciation by supplying the tissues with fluid, but also to dilute the virus which by concentration was overwhelming the nervous system.

Under this treatment the jaws relaxed, enabling both children to nurse, other tetanic symptoms abated and recovery was uninterrupted.

Suggestions in the Management of the Common Diseases of Children.

TILDEN, J. H. (*Charlotte Med. Journal*), in a tersely written article gives some very valuable suggestions. He says that there is more ignorance displayed in the management of children's diseases than all others. Mothers are universally ignorant about feeding, clothing and training children, and doctors can not or will not enlighten them. The doctors are classified under two headings—the “stickler for nomenclature,” who wishes to make all the diseases fit the text-books, losing all the benefit derived from independent search for ætiological factors, and the “symptom hunter,” ignorant of pathology, ætiology and even physiology, who has his mind stored with remedies and symptoms. If more attention were given to the proper feeding, nursing and trying to find out the cause of disease rather than to classification and materia medica, the results would be better.

Teething, improper and over-feeding, bad ventilation, thermal changes, overworked and overworried mothers and septic infections are given as the causes of sickness in children under two years. Teething is not as important an ætiological factor as it has long been regarded.

Children under *one* year should not have anything but milk or the better class of infant foods. The foolish feeding of children—that is, giving them food that they can not digest—so “perverts the

metabolic forces, that with the slightest change from heat to cold, or *vice versa*, the natural rhythmical adjustments can not take place, and sickness is the result." In bottle-fed children, the imperfect asepsis in the care of the bottles is the cause of much trouble. There should be at least *six* bottles and six nipples—no glass tube and rubber attachment, for they can not be properly cleaned. Bottles should be cleaned immediately after nursing and then *boiled* and put out in the sun. The nipples should be washed with soap and a brush, then scalded and kept in glycerin to which has been added salicylate of soda—ten grains to one ounce of glycerin. Children under six months are not to be fed oftener than every three hours. Over six months and under twelve, every four hours. If they are not satisfied and are restless, give water, but let it be warm and out of the bottle just the same as food. A constant desire for more nourishment than usual generally means gastric irritation and, instead of giving more food, the regular amount should be cut down and water substituted.

Cow's milk is the next best food to mother's milk, preferably from a young, healthy and well-kept cow. The milk should be sterilized and kept in tight glass jars—they to receive the same attention as the bottles. If you are sure of the quality of the milk and limit the quantity taken to the digestive capacity of the child, the "thick, tough curd" so much talked about will cause no trouble. Children should wear light flannel even in hot weather and delicate ones an additional flannel abdominal band wide enough to cover the stomach and bowels. Prevent chilling at night, in malarial districts particularly, because they are liable to contract intermittent fever. Children should sleep by themselves when possible, because they get purer air than when sleeping with grown people.

Overworked and overworried mothers, when they are nursing babies, are the cause of much sickness. Nothing is more liable to make a child sick than to nurse from a mother who is exhausted by overwork.

Septic infection of the mother is another cause of sickness in children which is not generally recognized. A laceration in the cervix of the mother, showing no very marked symptoms in her, will sometimes produce a systemic infection of the child causing a diarrhœa of a severe character and often convulsions. He mentions a case of this character in which a mother brought the convulsions back three times in two weeks before she was convinced that her milk was the cause of the trouble.

The septic infection of the child due to the absorption through

the umbilicus of septic material is also observed, due to improper care of the stump.

Nearly all of the diseases of young children, except the contagious fevers, are on the order of cholera infantum, ranging from a slight indigestion to the terrible cholera infantum of warm climates. The treatment of this disease is most important, for if badly managed the sequelæ are many. Do not handle, hold on lap, carry about room or rock, but have it kept quiet on the bed. If it is being nursed, treat the mother. She must have mental and physical rest, good food and at regular times. Get her in the best physical condition possible, then her milk will be at its best. Get a nurse if possible and keep the mother away. Room quiet and well ventilated. No nourishment of any kind to be given for from twelve to twenty-four hours, depending on severity. One ounce of a good essence of pepsin in three ounces of water, and give a teaspoonful every two hours. If great thirst—

R Ess. pepsin..... $\frac{3}{4}$ ss. ;
Aq..... $\frac{3}{4}$ iv.

M. Sig. : One drachm every hour.

Alternating with—

R Bichloride of mercury..... gr. $\frac{1}{16}$;
Aq..... $\frac{3}{4}$ iv.

M. Sig. : One drachm every hour.

Give the child all of the hot water it can take from a bottle, with two grains to one ounce of salt added. After the fasting period has passed, begin by giving only one fourth the usual amount of food and at the same regular intervals as before. Do not change food until you are sure that it is bad. If there is nausea, stop food again, also water by mouth, but give by enema. Sponging will relieve thirst. If the first feeding agrees and symptoms improve, gradually increase amount of food until normal. For pain in the bowels, wash out with large enema, quart of hot water with teaspoonful of salt added. May have to repeat in from six to twelve hours.

The pepsin digests all of the food in the stomach, the bichloride overcoming and preventing decomposition and thus meeting all of the indications for the rational use of medicines.

Sponge or tub baths will reduce the fever and allay the nervous irritability produced by the fermentation. Other means are seldom necessary.

The Treatment of Infantile Clubfoot.

TAYLOR, WILLIAM J. (*Philadelphia Polyclinic*), says that this affection is essentially a curable one, and if the treatment be instituted early enough, and if the proper attention be given both by doctor and nurse it can nearly always be cured. It will never get well if left to itself but will surely produce in after-life not only a horrible malformation but also a most serious amount of disability. The younger the child, under careful and systematic treatment, the better chance of securing useful and good-looking feet.

The distortion is an inward twist of the foot and a depression of the outer edge. The whole front of the foot is dislocated or displaced. All of the tissues are implicated, skin, muscles, tendons and fascia. The bones are changed in shape, but at this age they are soft and cartilaginous and pressure will overcome the displacements.

Congenital clubfoot is either, simple varus or equino-varus. Theories as to causation are unsatisfactory, Bradford and Lovett (*Orthopædic Surgery*) saying that "we are ignorant of the causation of clubfoot and unable to give a reasonably satisfactory explanation of the phenomena of its development."

The treatment consists in improving the circulation and strengthening the relaxed fibers by gentle massage of each muscle—in fact all of the tissues. The foot is then held firmly and the contracted tissues put upon a stretch and the deformity overcome, to the point of actual pain. As the tissues are very sensitive, great care must be exercised not to inflict damage to the skin. After two or three weeks, the tissues become hardened when a light but strong splint may be applied. The splint must fit accurately, be well padded and should be removed at least twice a day and the skin rubbed with oil to prevent abrasion, etc. Flannel bandages should be used.

When the equino-varus is marked it is best to treat the varus first, and after the inversion is overcome the tendon can be divided subcutaneously without any trouble.

Plaster-of-Paris bandages may be safely applied at a month or six weeks of age—if the foot does not yield to simple means—but great care must be used in their proper application. Envelop the entire foot and leg in cotton, for the plaster must be carried above the knee to be retained properly. Then apply a narrow flannel bandage to retain the cotton and after correcting the deformity as far as possible apply the plaster, the foot being held in the corrected position until it sets. This bandage should be reapplied every two or three days, each time gain-

ing a little better position and retaining it by the plaster. With care, attention to details and constant supervision the vast majority of these cases can be completely corrected. To complete a cure of the deformity much time is necessary, but the end certainly justifies the care exercised for its accomplishment.

Imperforate Anus ; Operation Nine Months after Birth ; Recovery.

STRACHAN, HENRY (*British Med. Journal*), reports a very remarkable case of imperforate anus, with a successful operation. The child was nine months old and had never had a movement of its bowels. The mother had noticed fluid fæcal material pass from "the front passage," there being no "back passage." On examination there was found to be an imperforate anus. A fistulous canal was found, leading from the fourchette upward and backward to the blind end of the rectum. An incision was made through the skin where the rectum ought to be. The gut was found to be about an inch from the surface of the skin. It was incised and the rectum brought down and stitched to the skin. A large quantity of solid and semi-solid fæcal matter was evacuated, the accumulation of nine months, as only a small portion of the fluid material could pass through the fistulous canal.

Recovery was rapid and the result of the operation all that could be desired.

NEW INSTRUMENT.

A NEW CERVICAL DILATOR.

ORIGINATED BY JOHN N. UPSHUR, M. D.,

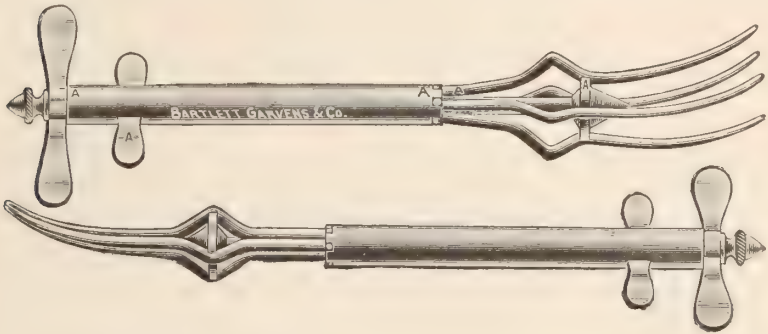
Professor of the Practice of Medicine in the Medical College of Virginia ; Honorary Fellow of the State Medical Society of West Virginia, etc., Richmond, Va.



The universal experience of gynæcologists in the treatment of stenosis of the cervix uteri for the relief of dysmenorrhœa, for the opening up of the uterine cavity for curettage or other treatment of the endometrium is its temporary benefit, because of subsequent relapse, often in a short time—unless the patient be a married woman and the operation be followed by early conception, the *cure* coming with the *uniform dilatation* as a necessary factor of the delivery.

This having been frequently my own experience, I have devised the instrument illustrated in the subjoined woodcut, and which I now

offer to the profession, believing that by its uniform stretching of the cervical fibers *better and more permanent results will be obtained.*

In construction the instrument is fully up to the requirements of modern asepsis, the removal of a single screw in the handle separating all its parts; it is much lighter than Goodell's dilator; it does not obscure the view through the speculum (a bivalve may be used) as other dilators do. The force is applied by a screw turned by a handle



in the end, similar to an *écraseur*, forcing forward a pyramidal body which renders the blade *sufficiently* rigid and diminishes by the more uniform application of the force the risk of laceration. When closed the blades are smooth, with convenient curve, about the size of a No. 9 American sound at tip, No. 14 in the center, and No. 20 at the heel. It measures just eleven inches and weighs less than half a pound. The intra uterine portion measures two inches. If desired it may be used as a two-bladed instrument in the beginning of the operation. *Twenty-two* turns of the handle opens the blades to the full extent; therefore, by counting the turns made the approximate amount of dilatation may be computed. When fully dilated the blades are about one inch apart in all directions, and two and three quarters in circumference. *These dimensions are absolute*, whereas in using the two-bladed dilator *the amount of dilatation is relative*. Two blades dilate in the form of an ellipse, thus , the stretching being chiefly of the anterior and posterior fibers, the *lateral scarcely at all*, and this explains the tendency, *almost inevitable*, to subsequent relapse. Four blades, on the other hand, as in the instrument offered, *dilate equally in all directions* thus , *equally stretching all fibers of the cervix*, and *diminishing*, if not entirely removing, *the tendency to relapse.*

The divulsion may be made under ether at one sitting, or it may be done gradually in the office. Practical trial of the instrument in the office demonstrates its use to be less painful and easier of application than the dilator of two blades.

This instrument has been made for me by Messrs. Bartlett & Garvens, instrument makers of this city, and I am indebted to them for the beautiful finish and nicer mechanical adaptation of the principles originated by me.

A COMMUNICATION.

A letter, of which the following is a translation, was received too late for publication in that portion of the JOURNAL reserved for *Correspondence*.

We will publish (as we receive them) further notices of this Congress, which, doubtless, will be of personal interest to a number of our readers.

BORDEAUX, *February 10, 1895.*

To the Editor of the American Gynecological and Obstetrical Journal.

DEAR SIR: The BORDEAUX GYNÆCOLOGICAL, OBSTETRICAL AND PÆDIATRIC SOCIETY desires to organize a Congress to be held next August.

I shall be much obliged if you will publish in your Journal the various notices with regard to the Congress, thereby assisting us to insure its success. The following is the first of these notices:

"On the occasion of the thirteenth Exhibition fixed by the Bordeaux Philomatic Society for the year 1895, the Gynæcological, Obstetrical and Pædiatric Society of this city wishes to arrange for a Congress to be held August 12th-16th, at the same time as the Congress of Physicians.

"The General President at the opening of the Congress will be Professor Tarnier; the three sections of Gynæcology, Obstetrics and Pædiatrics will however each have a special President viz.

"Professor Le Dentu for Gynæcology.

"Tarnier for Obstetrics.

"Lannelongue (of Paris) for Pædiatrics."

Hoping you will be disposed to grant this request, I remain, dear sir,
Yours truly, in behalf of the Organization Committee,

LEFAUR, *General Secretary,*

Associate Professor in the Medical Faculty, Surgeon-in-chief of the Maternité.

THE
AMERICAN GYNÆCOLOGICAL
AND
OBSTETRICAL JOURNAL.

APRIL, 1895.

A CONTRIBUTION TO DEMOGRAPHY.*

BY THEOPHILUS PARVIN, M. D., PHILADELPHIA.

The topics considered in this paper are the number of births in Philadelphia during certain periods, the relative proportion of males and females born, the number of infants dying in the first year, the mortality from eclampsia and from puerperal infection, and, finally, that from old age.

The facts are derived from the statistics of the Philadelphia Board of Health, and include two periods of five years; the first, which may be called the pre-antiseptic period, embraces the years from 1868 to 1872, inclusive, and the second, 1888 to 1892, also inclusive.

For working out percentages, and the relations to larger numbers. I am indebted chiefly to my son, Dr. Noble B. Parvin, and to Dr. Charles H. Reckefuss, whose kind help it gives me pleasure to here recognize. The entire number of births during the ten years brought in review is a fraction over 231,000; this fraction has been omitted in some of the estimates. Further, in a part of the paper I have considered the births as representing an equal number of mothers. Taking the number of plural births, as established by Veit from the study of 13,000,000 births in Prussia, there were in these Philadelphia births of 231,000, a fraction over 29 instances of triplets, and precisely 2,625 cases of twins. But the entire number of plural births was only 2,654; they are not further considered, because they could not produce any material variations in the conclusions.

* Read before the Philadelphia Obstetrical Society, March 7, 1895.

The following table shows the months in which the greatest, and the smallest number of children are born, and consequently the months in which conception is most likely, and those in which it is least likely to occur; the months in which the mean number of births is found are also given:

Number of Births in Philadelphia during Ten Years, according to Different Months.

Month of birth.	Month of conception.	Number of births.
December.....	March.....	21,001
August.....	November.....	20,410
July.....	October.....	20,396
October.....	January.....	20,178
September.....	December.....	19,984
January.....	April.....	19,812
November.....	February.....	19,288
March.....	June.....	18,745
February.....	May.....	18,407
June.....	September.....	18,402
May.....	August.....	17,555
April.....	July.....	16,886

Births of Illustrious Men in the Different Months of the Year in the Order of their Frequency.

Month of birth.	Month of conception.	Number of illustrious men.
June.....	September.....	204
July.....	October.....	218
May.....	August.....	230
April.....	July.....	243
September.....	December.....	246
August.....	November.....	258
February.....	May.....	266
March.....	June.....	274
October.....	January.....	288
November.....	February.....	294
December.....	March.....	303
January.....	April.....	371
Total.....		3,255

Mantegazza,* from whom I have copied the preceding table, remarks: "The month of January is the most fecund in illustrious men, the least fecund is June, that which accords almost with the laws of fecundation in general. It is necessary rather to give importance to the different groups of months than to each month in particular, and the comparison of these groups shows that the maxima and

* *Hygiene de L'Amour.*

the minima of illustrious births do not vary abruptly, but undergo slight increase and decrease in the different periods of the year." He then divides the year into three periods, each including four months, maximum, minimum, mean. The first, embracing January, December, November, and October, furnishes 1,316 births of illustrious men; the minimum period, June, July, May, and April, only 893; and the mean period, September, August, February, and March, 1,044.

From the preceding table we find that in Philadelphia the maximum of births occurs in the months of December, August, July, and October, the number being 81,985, and the minimum the period embracing February, June, May, and April, the number being 71,250. The mean period, the months of September, January, November, and March, furnishes 77,829.

It follows that conception occurs most frequently in March, November, October, and January, most rarely in May, September, August, and July. Comparing the table of Mantegazza with this, it will be observed that they materially differ, and the explanation of the variations is not obvious.

The Relation between Female and Male Births.—The relative frequency of girls and boys born is usually placed at 100 of the former to 106 of the latter. Bertillon,* comparing the statistics of births in some sixteen different countries, finds that Italy furnishes the largest number of boys, the relation of the sexes being 100 to 107.3.

We know, further, that after a war in which a large number of men has been destroyed, male births increase. So too, the proportion is greater in new colonies. Finally, old primiparæ give birth to a large proportion of boys, the relation between female and male births being, according to Hecker and Ahlfeld, 100 to 125, or even to 140.

The following table shows that there is an extraordinary number of boys born in Philadelphia. During the first five years the relation of female to male births was 100 to 110, and in the second, 100 to 109: in one year, 1870, it was 100 to 113:

Average Male to Female Births.

	Male to 100 female.		Male to 100 female.
1868.....	108	1888.....	110
1869.....	109	1889.....	108
1870.....	113	1890.....	109
1871.....	111	1891.....	109
1872.....	110	1892.....	106
First five years.....	110	Second five years.....	109

* Article, Natalité, *Dictionnaire encyclopédique des sciences médicales.*

Why there is a preponderance of male births in all statistics, and why this preponderance should be especially great in Philadelphia are questions that have as yet no satisfactory answers. In regard to the general preponderance, a partial, probable explanation has been suggested by Prevost, and adopted by Mantegazza: After the birth of a son, further increase in the family may be prevented, Malthusian moral restraint being possibly the preventive means. In cities the prevention of conception, and the production of abortion will be more frequent than in the country. Here I may remark that the natality of Philadelphia, I have not had time to study; but from merely glancing at some of the statistics, I believe it falls below the normal. In the near future I hope to investigate the subject.

Mortality of Infants in the First Year.—The annexed table shows the proportion of deaths in the first year to the births during the two series of years. A comparison of the tables shows that while the mortality has lessened, the diminution has not been great, certainly not as great as might have been hoped, or anticipated. In the first period 266 of every 1,000 children born, died in the first year; in the second, 225. The facts show but little progress in the hygiene of infancy, or in the treatment of infantile disease:

Percentage of Mortality of Infants under One Year to Number of Births.

	Percentage.	Cases per 1,000.
1868.....	26.6	266
1869.....	25.4	254
1870.....	26.9	269
1871.....	25.1	251
1872.....	29.2	292
First five years.....	26.7	267
1888.....	21.5	215
1889.....	21.4	214
1890.....	23.2	232
1891.....	22.5	225
1892.....	23.5	235
Second five years.....	22.5	225

Puerperal Eclampsia.—Eclampsia occurs with varying frequency. While only the fatal cases of the disease are recorded, from the number of deaths, we can approximate the number attacked. It is safe to say that twenty-five per cent. die, and hence three out of four recover. Thus multiplying the mortality record by four we have the morbidity fact.

These statistics show first, that the disease may vary greatly in

frequency in different years. Thus there were 56 cases of eclampsia in 1890, the number of births being 27,858, while in the next year the number of births being less than 2,000 greater, there were 136 cases of eclampsia: in the following year, a greater number of labors, and only 60 cases of eclampsia. These wide variations are unexplained, and prove that there is some factor concerned in the ætiology of the affection not only unknown, but unsuggested.

A comparison of the mortality in the first five years with that recorded in the second five years, proves that the disease is less frequent, or that the profession know better how to treat it: thus the first mortality is represented by 1.5 per 1,000, and the second by 0.7.

Percentage of Deaths from Eclampsia to Number of Labors.

	Percentage.	Cases per 1,000.
1863.....	0.16	1.6
1869.....	0.14	1.4
1870.....	0.13	1.3
1871.....	0.15	1.5
1872.....	0.14	1.4
Average percentage for first five years.....	0.15	1.5
1888.....	0.07	0.7
1889.....	0.07	0.7
1890.....	0.05	0.5
1891.....	0.11	1.1
1892.....	0.05	0.5
Average percentage for second five years.....	0.07	0.7

Puerperal Infection.—The next question relates to antiseptic obstetrics. Have we evidence from these statistics that puerperal mortality, and necessarily puerperal morbidity have been lessened? I have reference only to a diminution as it concerns puerperal infection.

The following table shows that the deaths per 1,000 during the first five years, which was a pre-antiseptic period, are represented by 1.3, while in the latter five years in which antiseptics has doubtless been more or less rigidly employed, the mortality is only 0.8 per 1,000. This reduction, while furnishing ground for congratulation, is hardly as great as might have been expected.

Schrader,* of Hamburg, published last year a discussion of the question, Why the therapeutic failures of antiseptics in puerperal fever? In it he especially decries the use of uterine antiseptic injections,

* *Woher der therapeutische Misserfolg der Antisepsis beim Puerperalfieber?* Von Wilhelm Schrader, Leipzig, 1894.

pointing out the evils that may result from them, declaring that every uterine irrigation seems to him a faro-bank play with the life of the puerpera, and asserts that we are constrained to return to the symptomatic treatment of our fathers in childbed fevers. It is one of the possibilities that our treatment of puerperal infection is not in all respects what it ought to be, and hence may come occasional failures to cure. But that the prophylaxis of infection has greatly lessened the disease, it seems to me no one can doubt. Still, one fatal case of puerperal infection means that many were infected.

Percentage of Deaths from Puerperal Fever to Number of Births.

	Percentage.	Cases per 1,000.
1868.....	0.11	1.1
1869.....	0.11	1.1
1870.....	0.17	1.7
1871.....	0.15	1.5
1872.....	0.11	1.1
First five years.....	0.13	1.3
1888.....	0.10	1.0
1889.....	0.09	0.9
1890.....	0.06	0.6
1891.....	0.08	0.8
1892.....	0.07	0.7
Second five years.....	0.08	0.8

Death from Old Age.—The final question upon which I have sought knowledge from these statistics, is not an obstetric one, nevertheless it is of interest to all. Have we any ground for believing that the number of those who die from old age increases? Certainly if human lives are what they ought to be, if there are great advances in public and in private hygiene, there ought to be a larger number from year to year recorded as dying from old age. But Philadelphia statistics do not confirm this belief. In the first period 1 to a population of 1,259 thus died, and in the second period 1 to 1,202. The difference is slight, but so far as it proves anything, it indicates an earlier decrease of vital power.

This fragmentary and imperfect paper may be little in itself, but it will be much if it stimulates to similar research and larger work, work that in the end might promote true and permanent knowledge, and help to avert evil.

THE ACCOUCHEMENT FORCÉ.*

BY G. M. BOYD, M. D.,

Physician to the Philadelphia Lying-in Charity.

To save the life of the mother or infant it is necessary under certain conditions to elect my interpretation of the *accouchement forcé*. Careful and clean obstetrics, stimulated by the antiseptic era, has brought about remarkable results in this branch of medicine. In two ways have our patients been benefited.

First.—By stimulating the practitioner to study more closely his pregnant patient, it has made him more cognizant of possibly an albuminuria existing which would have threatened her life, or of a pelvic deformity which would have greatly endangered the life of the infant. Thus he has avoided the rapid emptying of the uterus.

Second.—Our appreciation of surgical cleanliness, which has resurrected so many operations in obstetrics and surgery, heretofore spoken of only in condemnation, has robbed these operations of their great danger. In the operation under discussion it has made us better appreciate with what comparative ease we can bring on labor, and how rapidly we can force the delivery to a termination. I wish to bring before your notice this evening the following cases with the purpose of eliciting a discussion on the various methods of rapidly emptying the uterus :

CASE I.—On February 7, 1894, I was sent for to see a patient in consultation with Dr. George Yeomans. The woman, a primipara about eight and a half months pregnant, was taken suddenly ill with symptoms of eclampsia seven hours before my arrival. I found her with a rapid pulse, unconscious, with marked uræmic symptoms, and the foetal heart could not be heard. There was no history of the patient having been in labor, and internal examination verified this fact. Realizing the importance of rapidly emptying the uterus, the patient was anæsthetized, placed upon an improvised operating table, on the back with legs well flexed, and genitalia thoroughly disinfected. I now began a manual dilatation of the cervix, with the index finger first introduced within the internal os, and in succession gradually the other fingers, finally the thumb, after the method described by Dr. Philander A. Harris in the *American Journal of Obstetrics*, Jan-

* Read before the Philadelphia Obstetrical Society, March 7, 1895.

uary, 1894. In twenty minutes the cervix was dilated sufficiently to admit the application of the forceps to the presenting head. The anæsthetic was now removed and the patient allowed to come partially out of ether. The forceps soon brought the head well into the pelvis, and at the expiration of one hour the patient was delivered. She bled profusely, but with the removal of the placenta this complication ceased. A well-applied binder and jacket bandage nicely controlled the contracting uterus. The patient remained in a semi-comatose condition for one day after the operation, when the head symptoms disappeared and she went on to a nice recovery. Ergot was not used.

CASE II.—On May 30, 1894, I was called to see a case with Dr. H. C. Deaver. A primipara about eight months advanced in gestation had been quite well during her advancing pregnancy when suddenly she was seized with an eclamptic attack. Previous to my arrival she had had a dozen or more convulsions and was now unconscious, exceedingly ill with a pulse of 140. A specimen of urine examined showed a high percentage of albumin. The patient was immediately anæsthetized and placed in a favorable position for the accomplishment of the *accouchement forcé*.

Internal examination revealed the fact that Nature again in this case had not instituted premature labor. The cervix only admitted the index finger. The necessary steps in regard to cleanliness having been taken, I began as in the previous case a manual dilatation of the cervix. After some manipulation I was able to overcome the rigidity of the internal os, and in fifteen minutes had three fingers partially introduced. To hurry, now, the operation because of the extreme condition of the patient, the pulse rapid and feeble, I made three superficial incisions of the cervix, using a blunt-pointed bistoury, its cutting surface guarded by the hand. The hæmorrhage from the circular arteries following these incisions was not of moment and I then continued the manual dilatation, and in about twenty minutes, thirty-five from the time the operation began, the cervix was sufficiently dilated to admit of the application of the forceps. By making firm traction I was now able to take advantage of the dilating power of the foetal head. Within one hour the patient was delivered of a stillborn infant. Although she was in an extreme condition the uterus contracted well. After the operation she came out of ether nicely, and in a short time the uræmic symptoms disappeared. The rapid interference in this case apparently in no wise complicated the puerperium other than necessity to use the catheter.

CASE III.—An American, primipara, aged thirty years, a negress, unmarried, was admitted to the Lying-in Charity May 4, 1894. The patient stated that one hour before her admission she was taken with a profuse hæmorrhage. The resident physician upon examination found the placenta partially over the os, the head engaging somewhat, still quite movable above the pelvic brim. She immediately tamponed the vagina with sterilized gauze, which stopped the hæmorrhage. Three hours after her admission I removed the vaginal tampon and began the rapid dilatation of the cervix. Within fifteen minutes the hand was introduced into the uterus, the membranes ruptured, and the foot having been found and brought down, podalic version was accomplished. Not being able to hear the foetal heart, which was in good condition when the operation began, I continued a rapid delivery of the breech and after-coming head. This was done to the sacrifice of the perinæum, which was quite rigid and necessitated careful repairs. Upon examining the placenta and cord a true knot was found, the death of the foetus possibly being due to traction on this knot during version.

The patient made an uneventful recovery and was discharged May 23d in good condition.

In eclampsia and placenta prævia there can be no question of the propriety of using forcible yet scientific means to rapidly check hæmorrhage or convulsions.

I have for some years appreciated how well the hand can dilate the cervix and have in a number of cases used this always ready and intelligent dilator, when the slower Barnes' bags might have been indicated. To carry out the operation it is best, where possible, to have the patient fully anæsthetized, and more important is it to have her placed on the back with legs well flexed and held by some mechanical device.

The cervix can now be more easily reached and brought into view if necessary.

In the first case reported the manual dilatation nicely answered, although she was a primipara.

In the second case, also a primipara, the incisions of the cervix were used to hasten the delivery.

I do not wish to recommend this treatment except in extreme cases. I do believe however that *per se* it does not materially complicate the case. Such incisions after labor, if extensive, should be immediately repaired. From what experience I have had in treating eclampsia I have become convinced of the importance of emptying

the uterus rapidly even in the mildest cases; and should the foetal heart be heard in any given case I would all the more feel the necessity of immediate anæsthetization and prompt interference with the hope of saving the infant. Rapid manual dilatation can be used for the induction of premature labor. For this purpose it is a method much more reliable than the introduction of the antiseptic bougie and less likely to damage the integrity of the ovum.

1953 LOCUST STREET, PHILADELPHIA.

PARAMETRITIS (OR PELVIC CELLULITIS): ITS PATHOLOGICAL IMPORTANCE AND CLINICAL SIGNIFICANCE.*

BY GEORGE TUCKER HARRISON, M. A., M. D.

It is scarce necessary to remind the Alumni of the Woman's Hospital of the importance attached by Dr. Emmet to parametritis (or pelvic cellulitis) on account of its clinical significance and pathological dignity. You can, one and all, recall how frequently, in his clinical instruction, he insisted upon the necessity of the recognition of this factor to explain many symptoms referable to the pelvic organs. Of late years, however, a certain class of gynæcological writers refuse to acknowledge the pathological importance of parametritis, nay, some go so far as even to deny its existence as a pathological entity. Thus a writer, Dr. Baldy, in a recent work entitled *An American Text-book of Gynecology*† speaks as follows: "An attempt to classify and compare, for differential purposes, the symptoms of cellulitis and peritonitis is of no more than problematic value; it is of no practical benefit. Clinically, the two affections are indistinguishable, for the reason that they always complicate one another, and their symptoms are so closely interwoven. The symptoms of the cellulitis, which is mostly secondary, are few and unimportant and are completely overshadowed by the far more important and severe symptoms of the peritonitis, the primary disease." Pozzi (*Traité de gynécologie*, deuxième édition, p. 675) expresses himself in these terms: "Aran, who was the first to see

* Read before the annual meeting of the Woman's Hospital Alumni Association, February 12, 1895.

† *An American Text-book of Gynecology*, p. 470.

clearly the extreme importance of the ovary and the tube in uterine pathology, was in advance of his age, it may be said, when he subordinated unreservedly pelveo-peritonitis to inflammation of the annexa of the womb. . . . As a matter of fact there is a tendency to return to the doctrine of Aran without affirming, however, it seems to me, with sufficient decision, that it alone may and ought to take account of almost all the peri-uterine inflammations. The most recent authors still maintain a separate description for parametritis and perimetritis, sometimes with the addition to them of adenolymphitis, and the embarrassed reader does not know what opinions to adopt in the midst of the subtleties of an illusory diagnosis. For my part I stand squarely on the doctrine of Aran. The facts that I have observed show me that the great majority of the peri- and para-uterine inflammations are nothing but salpingitis and perisalpingitis. The lymphatics assuredly play in them a great rôle, but this rôle is itself subordinated to the anterior inflammation of the mucous membrane of the uterus and its prolongation into the oviduct. And it is the primordial phenomenon which ought to give the name to the disease." There is certainly a marked discrepancy between the views advocated by Emmet on the one side and Pozzi on the other. What is the explanation then of this contrariety of opinion among gynæcologists? One reason is the addition to our knowledge of the morbid affections of the pelvic organs which abdominal surgery has brought us. As Lawson Tait observes (*Diseases of Women and Abdominal Surgery*, p. 132), "before the light came which was shed upon these ailments by modern abdominal surgery I believed, as others did and do still, that parametritis, or pelvic cellulitis, was a common disease; and in my writings up to 1878 it is evident that I confused cases of damaged uterine appendages with 'pelvic cellulitis.' The latter disease is rare and occurs in two forms, depending for their characters on the situation of the disease." This is undoubtedly correct. Many cases which we formerly diagnosticated as parametritis, we now know to have been salpingitis or oöphoritis. Other cases diagnosticated as *parametritis posterior* may have been *perimetritis*. It is not strange, therefore, from the tendency in human nature to run to extremes, that many modern gynæcologists, especially those who have largely to do with abdominal surgery, should advocate such partial views. It is well, however, to bear in mind the homely wisdom embodied in the German adage "in emptying the bath it is not necessary to spill the baby." In these circumstances then let us invoke the aid of pathological anatomy and accurate clinical investigation to ascertain, if may be, what is the true

doctrine in regard to parametritis. In his classical essay upon puerperal diffuse metritis and parametritis (*Archiv für pathologische Anatomie und Physiologie u. für klin. Med.*, Bd. xxiii, S. 416) Virchow thus speaks: "The loose mass of fat and connective tissue which fastens the vagina and the neck of the womb laterally and at the same time forms the basis of the ligamenta lata is one of the most frequent places of disease, and yet we would always think erroneously if we were to call these morbid states diseases of the ligamenta lata. The name *parametritis* will remove the obscurity. The uterus itself as well as the loose tissue just mentioned, which forms the basis of the broad ligaments and is prolonged into these, is very frequently the seat of puerperal diseases." In the early stages of parametritis, if a puerperal woman dies accidentally, what is to be found? Virchow answers this question thus: "We may perhaps say in the ordinary sense of a coarse section nothing is to be found, and we may especially with tolerable certainty assert, that if such a uterus were to be the object of one of those ingenious examinations which we are accustomed to call forensic, it would be quite certainly noted as normal or healthy. A true humoral pathologist would then further infer that the process here 'was purely in the blood.' Notwithstanding, much is to be seen in such cases, at least as much as in an inflamed cornea in the first stages of its disease, we must, to be sure, observe accurately, and I am convinced that each one who gives due attention to the subject will also find the true state of affairs without difficulty, if he has, in the first instance, gained an accurate idea as to what is of consequence." This condition he describes as "cloudy swelling." At other times the disease assumes the character of a diffuse phlegmon. Again the processes may range from the slightest form of phlegmon to the severest diphtheritic, gangrenous, and putrefactive forms. Therefore, he grouped them together, from their similarity to erysipelas of the skin and subcutaneous tissue, under the name of *erysipelas malignum puerperale internum*. This description of Virchow applies to but one form of parametritis, as a matter of course, that which most frequently comes under the observation of the pathological anatomist, while the form ending in restoration to health did not find proper recognition. It is fortunate that this subject has been studied by W. A. Freund in his beautiful monograph,* from the standpoint of pathological anatomy and clinical experience, in a way that has illuminated it with rare felicity. "Functionally," says this

* *Gynecologische Klinik*, Strassburg, 1885.

author, "a significant rôle is imparted to the connective tissue by virtue of its union with three hollow organs exposed to very great changes of volume and place, in part subjected to the most active metabolism. Thanks to this union it takes ready and active part in the manifold diseases of these organs, and in some of them—especially those evoked by infection—it affords the nearest and most important station for the morbid products." Again: "There is scarcely a notable disease of the pelvic organs in which the pelvic connective tissue does not play a larger or a smaller rôle; in many cases its participation gives the standard for the prognosis and the therapeutical indications in acute and chronic diseases of these organs, so that it can not be overlooked or underestimated without danger. In this sense we may say that the pelvic connective tissue controls gynecological pathology." According to Freund all forms of pelvic phlegmonous inflammation may occur in all conditions of the sexually mature woman. "This affection is not rarely observed," he remarks, "in the non-gravid condition of the sexually mature woman, but appears most frequently and most intensely in the puerperal state." In the paper I read before the Obstetrical Society, Feb. 3, 1891, following Landau, Spiegelberg, and Freund, I discriminated between a traumatic and septic form of acute parametritis. In the light of modern investigation this distinction can not be maintained. The cause of acute parametritis is always to be sought in an infection with microbes after wounds. The microbes are the pus-producing schizomycetes, the *Staphylococcus pyogenes aureus* and *albus*, and especially the *Streptococcus pyogenes*. With this single modification I subscribe heartily to the views of Freund, founded as they are on accurate clinical study and pathological anatomical investigation, and shall follow him in my exposition. Thanks to the general introduction of antiseptic and aseptic rules infected wounds in obstetric and gynecological practice are much less frequently seen now than formerly, and consequently acute parametritis is not observed as often in modern times as previously. It occurs in two forms—that in which there is hardly any exudate, but the formation of a *lymphatic thrombosis*, and a *phlegmonous form*, with extensive infiltration of the parametric tissue, and subsequent breaking down of tissue into pus, with the formation of an abscess. Outside of the puerperium parametritis occurs in connection with infecting wounds of the cervix, the portio-vaginalis, and the upper and middle parts of the vagina. In years gone by it was especially observed after dilatation of the cervix by sponge and laminaria tents, and after explorations of the uterine cavity by the finger.

Again, in consequence of the use of unclean sounds and after ulcerations of the vagina produced by ill-fitting pessaries. No more competent clinical observer than Fritsch can be mentioned, yet listen to his views as to the existence of a non-puerperal parametritis. "I might here," he remarks (*Bericht über die Gynäkologischen Operationen des Jahrgangs, 1891-'92*), "shortly discuss the question, Is there outside of the puerperium ætiological grounds for parametritis? This question must be answered in the affirmative, although, in general, cases of non-puerperal origin are certainly exceedingly rare. In some cases, which to me were demonstrative of spontaneous origin, I finally ascertained that a criminal abortion had been produced which at first was not to be supposed. I have also seen some cases which, to my mind, make it probable that a perityphlitis may become a parametritis. . . . Again, parametric tumors are developed with especial facility after intra-uterine therapeutical measures, if once before a *parametritis puerperalis* had occurred. I have several times, after very cautious aseptic curettage operations, seen large parametric, inflammatory tumors originate in a few days without participation of the peritonæum. In old lateral lacerations the boundary between the parametrium and the inner wall of the cervix is so thin that certainly an accidental infection of the parametrium easily takes place. Also in pyonephrosis large extraperitoneal suppurations may develop, reaching down deep into the pelvis. I have operated upon some such cases in nulliparæ. But how such accumulations of pus can develop quite spontaneously in virgins, in which cases an infection is not to be supposed, is an enigma. And yet now and again we see such a case." Freund calls attention to the fact that an extensive parametric exudation may cause compression of the ureter. In one case he mentions, in which the parametritis was on both sides, urinary retention existed for ten days with the development of a hydronephrotic distention of colossal dimensions. The patient refused puncture and died of uræmia. Fritsch states that in an autopsy made upon a patient who had chronic parametritis he found atrophy of one kidney. Freund properly calls attention to the practical significance of distortions of the ureters caused by parametric cicatrices. "In discissions and amputations of the cervix, and in total extirpation of the uterus, this circumstance," he remarks, "deserves careful attention. We should always bear it in mind on the demonstration of parametric cicatrices." As confirmatory of the doctrines taught by Dr. Emmet let me quote from this author the following passage: "It is a known fact that shrinking *parametric* cicatricial bands may cause displacements and

deformities of the uterus of different kinds, mostly permanent, by displacement and fixation of the cervix. The very significant influence of these cicatrices, too, on the occurrence of neuralgias of the pelvic nerves and those of the inferior extremities, and on the venous disturbances of circulation in the pelvis and inferior extremities, has been repeatedly discussed; finally, their influence on the chronic inflammatory catarrhal conditions of the uterus, the bladder, and the rectum deserve mention. Blood and lymph circulation suffer under these circumstances direct disturbances and indirectly through the fixation of the organs, which in this way are withdrawn from the influence of the respiratory movements more or less. The significance of these factors for the origin and cause of freshly appearing inflammatory processes is perceptible." The symptoms of parametritis are well characterized and are those pertaining to an inflammatory pelvic tumor, and consist of pains, increased by pressure, referable to the pelvis and extending to the leg of the affected side, besides sacral pains. At times the pains are insignificant. There is difficulty in the evacuation of the fæces and the urine. The fever is attended with evening exacerbations. Of all importance is the diagnosis. At times it is comparatively easy and at others a matter of exceeding difficulty. The results obtained by objective examination, especially in the beginning of the affection (as the boundaries of the exudation are not accurately defined), are usually of less importance than the knowledge of the point of departure of the inflammation. If an inflammation beside the uterus occurred in connection with a wound of the portio, of the fornix vaginæ, or the posterior commissure of the vulva, extending high up the vagina, it necessarily, in the beginning, is situated in the parametric tissue, and the facts elicited by bimanual palpation would correspond. If the tumor originated without pains, if it is not very sensitive to pressure, it must have originated in the subserous tissue. Exudations situated deep down in the pelvis correspond mostly to the parametritis, while exudations situated beside the uterus in the higher part of the pelvis are either tubes or ovaries. Exudations felt behind the uterus, extending around to one or the other side, are caused by tube, ovary, or pelvic peritonæum. Another point of great diagnostic value is the circumstance that a woman suffering from parametritis does not impress one as having a grave affection to the same degree as a woman with pelveo-peritonitis. When resting quietly in bed she makes no complaints of suffering. The parametric exudations are very readily confounded with uterine *myomata*; generally, however, the differential diagnosis can be made by bearing in mind that such

exudations have a more flattened form, are not round. Also this confusion may be avoided by having regard to their origin, their want of mobility, and their sensitiveness to pressure. A case beautifully illustrative of the mode of origin of parametritis occurred in my practice recently. I was called to see a woman suffering with phlegmasia alba dolens three weeks subsequent to her confinement. She had been attended by another physician in her confinement. Here the point of departure of the parametric process was the cervix, the place of inoculation being a laceration which had occurred in parturition. The infection was doubtless produced by the vaginal irrigations which had been used. The inflammation had extended along the connective tissue, accompanying the large vessels of the thigh beneath Poupart's ligament to the femoral region, and by compression had produced secondarily venous *thrombosis*. In regard to treatment it is not necessary to enter into details before this audience. I shall only call your attention to some recent suggestions as to the management of purulent parametritis. Fritsch is an advocate for the early incision of the parametric abscess from the vagina. To use his language: "Tumor and fever * is for me an indication for the operation when the tumor is large and no advance toward improvement is obtained by the ordinary therapeutical measures. If the tumor remains two or three weeks of the same size, and the typical absorptive fever proves that pus is present, I consider the operation as indicated." Veit, in the course of his remarks upon purulent parametritis made at the session of the Obstetrical and Gynæcological Society of Berlin, May 10, 1894, declared that by this early incision no harm is done, but no good is accomplished. Of especial importance, in his opinion, is the determination of the place to be incised. This will be decided by the anatomical relations of the exudate. The opening from the vagina, in his opinion, is only indicated when the posterior third of the parametrium is infiltrated and the vagina here is encroached upon by the tumor. In all other cases, with the exception of the gluteal abscess, called forth by the infiltration making its way through the *incisura ischiadica major*, he maintains that an incision above Poupart's ligament is indicated. This, of course, is *subperitoneal*. Only when the lowest end of the abscess extends into the pelvis is drainage through the vagina indicated. It is a rather remarkable fact that Pozzi, who was present at this meeting of the Berlin Obstetrical and Gynæcological Society, in the discussion following Veit's remarks, observed that

* *Vide loc. cit.*, p. 282.

he had operated upon two cases of parametritis by this method for which he had proposed the name *subperitoneal laparotomy*. According to his views, quoted above, there is no such thing as parametritis in the strict sense of the term. This inconsistency is apparent. But, besides the acute inflammations of the parametrium with their chronic consequences, there is a chronic form of parametritis which runs its course without the formation of a plastic exudation and leads to cicatrization and atrophy of the parts affected. The anatomical demonstration of this peculiar and interesting form of inflammation we owe to the admirable researches of W. A. Freund. He gives it the name *parametritis chronica atrophicans*. Even virgins are attacked with this affection. It is frequently found in the connective tissue of the folds of Douglas, constituting Schultze's *parametritis posterior*. Dr. Emmet, as you are all aware, laid great emphasis on this variety of parametritis in his clinical demonstrations to explain many morbid phenomena. This inflammation takes its origin, it is supposed, from a small wound of a mucous membrane, for example, of the rectum in obstinate constipation, of the *portio*, or of the vagina. The essential feature of the disease is a diffuse induration of the connective tissue analogous to cirrhosis of the liver, lungs, and kidneys. The significance of this form of inflammation is exceedingly great. As has been sufficiently demonstrated, especially by the post-mortem investigations of Ziegenspeck, a typical form of antelexion is evoked by *parametritis posterior*. Pressure on nerves, the cervical and large parametric ganglia, may result, as well as displacements of the uterus. All the phenomena of *neurasthenia* and *hysteria* may be observed in the subjects of this affection. The local symptoms are pains radiating before, backward, and downward, disturbances of the functions of the bladder and rectum and dysmenorrhœa. The treatment should consist of such general measures as are applicable to the hysterical and neurasthenic cases. Locally hot-water vaginal douches seem to accomplish much. Küstner asserts that he has met with some success in desperate cases by a recourse to castration. As you will perceive, I have only touched on many interesting points which might have been largely expanded. My aim has been to be suggestive rather than dogmatic. I hope, in conclusion, that I have sufficiently shown that the doctrines maintained by Dr. Emmet in regard to the vast significance of parametritis rest on a secure basis, and that if his views, in the light of modern science, must be modified in detail, yet in their great outline they can not successfully be combated.

PROLAPSE OF THE ANTERIOR VAGINAL WALL AND ITS REPAIR BY LATERAL COLPORRHAPHY.*

BY T. J. WATKINS, M. D., CHICAGO,

Attending Gynæcologist, St. Luke's, Lakeside, and Provident Hospitals.

The anterior vaginal wall is one fourth to one eighth of an inch in thickness, is thickest at the urethral end, and becomes gradually thinner as it approaches the cervix uteri. It is composed chiefly of mucous membrane, connective tissue, and muscles. The only muscle of special importance to the gynæcologist is the levator ani, which helps to support the lower end of the vagina. The connective tissue is important as it is the chief support of the anterior vaginal wall.

In the consideration of injuries of the pelvic floor attention has heretofore been given almost exclusively to its muscles. The connective tissue, however, demands careful study, as it is the only structure of the pelvic floor which can give continuous support; the muscles can only act intermittently.

The connective tissue of the anterior vaginal wall forms a tense, firm band across the vagina opposite the neck of the bladder, which gradually becomes thinner as it approaches the uterus and as it extends along the urethra. It is attached to the bony pelvis on either side, and its reticular arrangement is such that it permits much more longitudinal than transverse freedom of motion; that is, it is so arranged as to give elastic support to the uterus, and to prevent prolapse of the urethra and bladder. The tension which this band gives to the vagina is apparent to the touch, and on introducing a Sims' speculum, with the patient in the left lateral position, the effect upon the anterior vaginal wall can be easily seen; that is, from the introitus vaginæ to the uterus, the anterior vaginal wall presents:

1. A convexity corresponding to the urethral curve.
2. A marked concavity opposite the trigone of the bladder, due to the tension of the band of connective tissue.
3. A straight line or a slight convexity from this point to the uterus.

When this fascia is intact, not overstretched and involuted, urethrocele and systocele can not occur.

* Read before the Alumni Association of the Woman's Hospital, February 13, 1895.

The anterior vaginal wall supports the urethra, is the chief support to the bladder, and, in conjunction with the utero-sacral ligaments, is an important support to the uterus. The anterior vaginal wall and the utero-sacral ligaments form a diaphragm across the pelvis, with an opening about one inch from the sacrum, through which the neck of the uterus projects. These structures hold the cervix uteri in normal location, and consequently are the principal factor in retaining the uterus in normal location and position.

Etiology.—Prolapse of the anterior vaginal wall is a result of subinvolution, stretching, or laceration of its structures, principally the connective tissue.

Subinvolution of the anterior vaginal wall following pregnancy causes prolapse. Subinvolution of the other pelvic structures tends to increase the prolapse by increasing the pressure from above and by diminishing the support from below. It follows labor, usually as a result of infection, lacerations, uterine displacement, early rising, prolonged standing or walking, and overwork. Subinvolution of the anterior vaginal wall has a pathology similar to that of subinvolution of the other pelvic structures, and so need not be further discussed.

Overstretching of the anterior vaginal wall may be due to traction, increased weight, or pressure. Loss of support of the posterior vaginal wall may also produce overstretching. Traction may be the result of cicatrices in the vagina.

Increased weight of the anterior vaginal wall seldom occurs, but may result from cysts developed within it.

Pressure on the anterior vaginal wall may be due to overdistention and tumors of the bladder, other pelvic tumors or increased abdominal pressure, excessive standing, heavy lifting, or improper dress.

Loss of support of the posterior vaginal wall is seldom, if ever, the sole cause of the prolapse, but is often a factor in its production.

The prevailing theory that prolapse of the anterior vaginal wall is dependent upon, and can not occur without laceration or relaxation of the posterior vaginal wall, is erroneous, because—

1. Extensive laceration of the posterior vaginal wall, even through the sphincter ani, frequently occurs without prolapse of the anterior vaginal wall.

2. Prolapse of the anterior vaginal wall occurs without laceration of the posterior vaginal wall.

3. Incision of the posterior vaginal wall; that is, artificial laceration, never produces prolapse of the anterior vaginal wall.

Winckel* found cystocele fifty-four times and rectocele only thirty-three times out of one hundred cases at the Polyclinic. This time-honored fallacy may be explained by the fact that both walls of the vagina are often simultaneously relaxed or ruptured, and that the posterior injury is much more apparent than the anterior.

Laceration of the anterior vaginal wall frequently produces prolapse. This factor had received very little attention prior to 1891, when the author read a paper before the Chicago Gynæcological Society on Laceration of the Anterior Vaginal Wall and its Repair, which was published in the *American Journal of Obstetrics*,† and later in Hare's *System of Practical Therapeutics*.

Emmet‡ and Schatz# have considered this subject only in its relation to rupture of the levator ani muscle, and state that its repair is impracticable. Mundé|| reports a case of median separation accompanied with hernia of the bladder.

Laceration of the anterior vaginal wall may be either unilateral or bilateral. I have never met with a case of median laceration, and have been able to find only one case on record.^Δ The lesion is usually submucous, and occurs at or near the insertion of the fascia into the bony pelvis. It often deprives the horizontal rami of the pubes of their fascial covering for a variable distance from the urethra, and may involve the levator ani muscle as mentioned by Emmet and Schatz. The location and extent of the laceration are easily detected by touch.

The laceration usually occurs during the passage of the foetal head through the parturient canal—

1. By the tension and pressure incident to the engagement of the vesico-vaginal septum between it and the pubes.
2. By tearing and grinding of the connective tissue from its attachment.

Schatz mentions anterior laceration of the levator ani muscle by instruments, and advises against oblique application of the forceps.

These causes may act individually in the primary stage of the deformity, but later they usually act more or less collectively.

Symptomatology.—The prolapse may be only an insignificant urethrocele or cystocele, or the entire anterior vaginal wall may be so

* *Diseases of Women*, p. 122.

† Vol. xxiv, 1891.

‡ *Principles and Practice of Gynæcology*, p. 364.

Centrbl. für Gyn., No. 40, 1883.

|| *American Journal of Obstetrics*, June, 1890, p. 614.

^Δ Mundé, *Op. cit.*

displaced as to be external to the lower plane of the pelvis. The connective tissue attached to the rami of the pubes may remain normal or may be partially or almost entirely wanting on one or both sides.

The vaginal wall is never thickened by œdema, congestion, or hyperplasia, but on the contrary is usually made thinner by reason of overstretching.

Prolapse which chiefly affects the urethra, causes it to be displaced downward rather than backward. The urethral fossæ on one or both sides according to the nature of the lesion, are much more shallow than normal.

The subjective symptoms, which are dependent upon the amount of the urethrocele and cystocele, are—

1. Partial incontinence of urine. The urine escapes upon exertion, such as coughing, sneezing, laughing, walking, lifting, or as soon as the desire to urinate is experienced.

2. Total incontinence of urine.

The other subjective symptoms are those which are described in the text-books under the consideration of cystocele and prolapse of the uterus.

In all cases of prolapse, careful palpation along the rami should be made in order to determine if the connective tissue has been separated at its place of insertion. Slight degrees of prolapse are of importance only when the lowest third of the wall is involved, and may be diagnosed by—

1. Absence of normal curves of the wall.

2. Shallowness or absence of depression in the fossæ, particularly the urethral fossæ.

3. Downward sliding of the wall, which can be detected by pressing the wall upward. In the normal state the wall is practically immobile.

4. Diminished fascial covering over the rami.

Treatment.—The prophylactic treatment of all varieties of prolapse, excepting those due to laceration, is so generally known that it need not be considered in this connection.

The prophylaxis of laceration consists in—

1. The support of the vesico-vaginal septum, to prevent engagement of the vesico-vaginal septum between the head and the pubes.

2. The avoidance of distention of the bladder with urine.

3. The prevention of excessive pressure of the head upon the pubic arch (Schatz).

4. The employment of the usual measures of hastening involution.

The palliative treatment is satisfactorily given in most of the text-books on gynæcology.

The operative treatment of prolapse of the anterior vaginal wall has been unsatisfactory, as would seem to be indicated by the multiplicity of operations proposed.



FIG. 1.

The unsatisfactory results of the median operations induced me to attempt lateral colporrhaphy, which I performed first in February, 1890, and which has in almost every case practically fulfilled the indications. The technique is as follows :

After the usual preparations, the patient is anæsthetized, and a combined recto-vaginal examination is made with the patient in the dorsal position, in order to locate the fixed points of attachment of the connective tissue of the vaginal walls to the rami.

The patient is then placed in the left lateral position, the anterior vaginal wall exposed by Sims' speculum, and a point in the left sulcus just above the fold of mucous membrane (the remains of the hymen) caught by a tenaculum. The denudation is commenced at this point, and is extended to a point beyond the prolapse. This point may be opposite the neck of the bladder, or the denudation may extend even as far as the lateral aspect of the cervix uteri. The breadth of de-

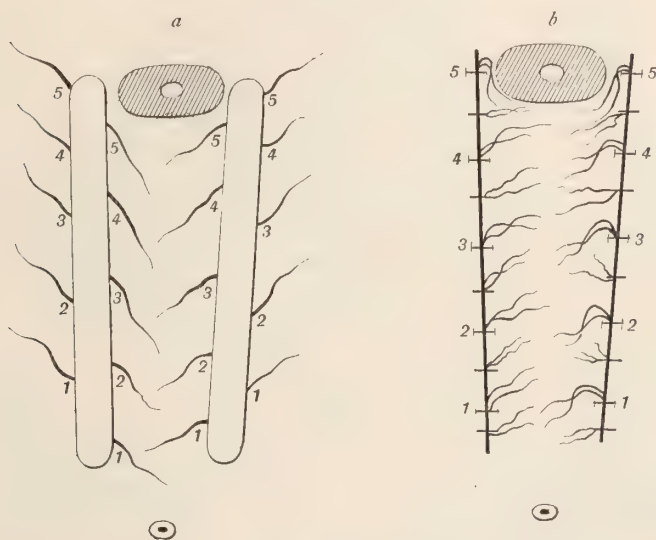


FIG. 2.

nuded surface is dependent upon the extent of the urethrocele and cystocele. The denudation is extended on the posterior wall sufficiently to obtain fixed points for the sutures in its connective tissues, and on the anterior wall, sufficiently to take in all redundant tissue without narrowing the vagina to less than its normal size, or producing tension on the sutures (Fig. 1).

The denudation may be upon one or both sides according as the relaxation is unilateral or bilateral. If the denudation is extended too near to the meatus urinarius, it interferes with the perineorrhaphy which ordinarily should be performed at the same sitting.

The uterus is now placed in its normal location and anteverted.

Beginning at the urethral end of the denudation, buried silkworm-gut sutures are passed obliquely from side to side, about one quarter of an inch apart, so as to slide the anterior upon the posterior vaginal

wall and the obliquity should be sufficient to restore the prolapsed wall to its normal location. The obliquity will therefore vary directly with the amount of prolapse and will have to be determined in each individual case (Fig. 2, *a* and *b*).



FIG. 3.

The sutures should include as much connective tissue as possible, care being taken not to injure the bladder, ureter, or urethra. The sutures should be placed deeply into the posterior wall so as to include the fascia, and as deeply into the anterior wall as its thickness will permit.

Artery forceps may be used for temporary hæmostasis.

The right side is now denuded and sutured in like manner.

The wound is thoroughly irrigated or cleansed with wet sponges, and the sutures tied from above downward. Superficial sutures are used when necessary, to make accurate closure of the wound or to stop oozing. The end of the sutures are left about half an inch long (Fig. 3).

In complete procidentia the uterus is replaced, the width of the denudation determined by bringing the anterior and posterior vaginal walls together, and marked by removing narrow strips of mucous membrane. The uterus is then made to prolapse, whereupon the vivifying can be rapidly and easily done. The uterus is again replaced before the sutures are introduced.

The bilateral operation should be done in from half an hour to an hour.

The after-treatment consists in the measures usually employed in plastic operation upon the vagina. The use of the catheter should, if possible, be avoided. The stitches may be removed after a week, but I prefer to allow them to remain for three or four weeks, according to the requirements of the individual case. Care should be exercised in removing the sutures in order to avoid injury to the union.

Curettement, trachelorrhaphy and perineorrhaphy should be done at the same sitting whenever they are indicated. The latter operation is of especial importance, because the prolapse is very apt to recur if firm support is not furnished by the posterior vaginal wall. The perineorrhaphy must be so performed that it will bring the perineal body snugly underneath the pubes. The Emmet operation is the only one which will accomplish this result.

Lateral colporrhaphy for prolapse of the anterior vaginal wall accomplishes the following results :

1. It slides the anterior wall upward and backward over the posterior wall, and retains it in practically its normal location.
2. It places the uterine end of the wall at or near its normal distance from the sacrum, which is an important factor in retaining the uterus in its normal location and position.
3. It fastens the relaxed or separated connective tissue of the anterior wall into the firm fascia of the posterior wall, and thus secures a firm line of union.
4. It restores the vagina to practically its normal length and caliber.

Lateral colporrhaphy is, I believe, the best operation in all cases of prolapse of the anterior vaginal wall, and is especially adapted to cases due to lateral laceration. No plastic operation will, however,

give satisfactory results in cases in which no appreciable amount of fixed fascia remains in the posterior vaginal wall, or in cases in which the uterus is prolapsed and adherent.

I have now performed this operation about seventy-five times with almost uniformly satisfactory results. Many cases of urethrocele with resultant partial incontinence of urine have come under my care, all of which have been entirely relieved by the operation. This was sometimes indicated on one side alone, but usually on both sides. In a few of the cases of cystocele complete relief was not permanent. In one case suppuration about the sutures occurred. In two or three cases I neglected to restore the perineum. In all the cases of complete procidentia, about twelve in number, the uterus has, so far as I know, permanently remained within the vagina ; in most of them it remained anteverted. Care was taken not to permit much standing until the uterus had returned to about its normal size.

93 EAST EIGHTEENTH STREET.

MENORRHAGIA AND METRORRHAGIA AS CAUSED BY CONDITIONS OTHER THAN FIBROIDS.*

BY E. L'H. MCGINNIS, M. D.

In treating the above subjects, I am led to believe that there are many of you who probably anticipate a brochure on the merits of electricity, my name having become more or less identified with its use in gynæcology. Let me therefore hasten thus early in the few moments of your time given to me to assure you that I shall touch but lightly upon its use here, preferring rather to hear your discussion first, and in concluding it I may be led to speak of my results with the current.

The terms *menorrhagia* and *metrorrhagia* may be and often are misleading, as any free flux of blood is generally placed under one or the other heading, depending upon the time of its occurrence. But what would be hæmorrhage in one case would be but normal menstruation in another of different temperament, so no positive rule can

* Read before the Alumni Association of the Woman's Hospital, February 13, 1895.

be laid down as a dividing line between them, beyond a comparison of the amount of flow lost by the same patient during previous catamenial periods. The length of time occupied is another element to be borne in mind when deciding upon its abnormality, and even when the amount lost during one customary period may not be large, yet when the time of the flow is prolonged the aggregate flux may be a drain upon the general health of the patient, and in such cases should be classed under one head or the other.

When a usually healthy and well-nourished woman, with no previous history of excessive flow is met with and found to be suffering from a loss of blood which is quite beyond her customary amount, the one cardinal point in the diagnosis of the *cause* is to determine in exactly what way the *circulation* is interfered with, and no amount of curetting or astringent applications to the canal will ever be of lasting benefit until the proper circulation is re-established. Whether the interference is due to the presence of a fibroid, a flexion, a metritis, or even an impaction of fæces, it matters little as regards this one symptom, and it is my firm belief that we have here the true explanation of violent hæmorrhage in a comparatively small submucous or a mural fibroid, while a much larger peritoneal one will cause little or none. Of course the condition of the blood itself may have something to do with it, but its importance seems to me to be secondary to the other cause. The use of certain drugs, too, such as quinine, iron, aloes, etc., may temporarily affect the flow, but their discontinuance is nearly always followed by freedom from excessive menstruation when normal local conditions exist.

By far the most common cause of menorrhagia and metrorrhagia is said to be the presence of fungosities on the endometrium, and yet we can not be sure that the same condition which causes the endometritis fungosa does not cause the hæmorrhage rather than the fungi. The removal of them by curette or other means certainly brings about a diminution of bleeding in most cases, but unless the proper conditions of circulation are restored at the same time, the trouble is most likely to recur.

Pelvic cellulitis itself may be sufficient cause for the conditions under consideration; and no less an authority than Dr. Emmet recently informed me that he had known of cases due entirely to pressure of impacted *fecal matter in the rectum*, which were speedily relieved by free catharsis.

When we take into consideration the amount of obstruction which must necessarily take place in malpositions of the uterus, and espe-

cially in flexions, we can not but wonder that the symptom is not more prevalent; for around the angle of the flexion, the blood must necessarily be more or less dammed back, and with the constant force of the heart beat behind it *some* outlet for the accumulation must be found and this is usually the uterine canal and vagina.

We are all familiar with the angry, engorged appearance of a lacerated cervix when hard scar-tissue is pressing upon the blood-vessels, and its disappearance when its pressure is removed by operation.

Of course malignant degeneration of the blood-vessels may cause hæmorrhage in any mucous-covered tissue, so that it requires but passing mention here.

It was my intention in treating of this heading to merely bring it before you for discussion—as it will be *your* remarks that are of value—and I therefore lay the *subjects* before you rather than these *few notes*.

PUERPERAL SEPTICÆMIA. ABDOMINAL SECTION FOLLOWED BY RECOVERY. ABSCESS IN RIGHT BROAD LIGAMENT.*

BY ANDREW F. CURRIER, M. D.

The cases of abscess during the puerperal state, whether the pus be encapsulated or free in the pelvic or abdominal cavity, which have continued long enough to result in general infection are fatal in the majority of cases whether surgical measures are taken to empty the abscess or not. If the entire pelvic and abdominal contents are bathed and infiltrated with pus I can see no legitimate excuse for an abdominal operation; drainage by the vagina might offer a shadow of hope if the condition were clearly made out and a vaginal incision rapidly made. As a rule which will have very few exceptions patients who have reached so advanced a stage of the disease will die whatever treatment be given or withheld. If the purulent and infectious material be encapsulated—that is, extraperitoneal—and can be discharged through a suitable opening, it being premised that the focus of disturbance is connected with the abscess and not with a septic and disorganized uterus, the results of operative treatment are frequently

* Read before the New York Academy of Medicine, February 28, 1895.

good, and are of course distinctly better as the poisonous influences are less intense and less diffuse. In such cases I have operated successfully by the median incision, by incision in the groin, and by incision in each ischio-rectal fossa.

The case which I am about to narrate is one which shows the occasional benefit of operation in extreme conditions, the general peritoneal cavity being uninvolved.

The patient is a tall, dark, slender Irish woman, thirty-two years of age, married six years and residing in Pelhamville, New York. She had a miscarriage soon after marriage (at the fourth month) and has always complained of soreness in the right iliac region since then. She has had four children, all her labors having been normal. Her last confinement occurred December 12, 1894, after a very short labor, the child being born before her physician's arrival. The child lived only twelve hours, cause of death not known. Her puerperium progressed normally and on the fourteenth day she was able to be about for two or three hours. On that day, without any particular warning and after no unusual exertion, she began to feel great soreness in the right iliac region, which increased in intensity until late at night, when her physician was summoned and found her almost in collapse. Her pain was allayed with morphia, and the following day a tumor was found in the right iliac fossa which ultimately (the exact time was not noted) enlarged until it reached across the pelvis to the limit of the left iliac fossa. The physician, who was one of the leading physicians in Mount Vernon, called to his aid an eminent fellow-practitioner in the same city, and the diagnosis of hæmatoma was decided upon. The case was carefully watched and the tumor gradually diminished in size and increased in consistency. On January 29, 1895, the patient had a most violent chill and four days later a second one. After that time she steadily deteriorated, emaciating rapidly, losing strength, and developing diarrhœa. She menstruated normally February 3d to 5th. I was called in consultation February 12th and found her, in addition to the foregoing data, with good appetite and clean tongue, but extremely feeble and excitable, with a scarcely perceptible, thready pulse of 120. Her physician reported that her kidneys were in good condition. The tumor was plainly perceptible through the thin abdominal wall, as large as a small cocoanut in the right iliac fossa, with a prolongation in the median line apparently about three by one and a half inches. My diagnosis was hæmatoma of the right broad ligament which had degenerated into abscess.

She was brought to New York and I operated Monday, February

18th. She was so weak when placed upon the table that I hesitated some minutes before deciding to operate. She was almost pulseless. A median incision was made as quickly as possible, the peritonæum was found somewhat congested, and the intestines were found firmly adherent to the tumor. It could not be approached from the front and was too high in the pelvis to be reached by the vagina. Another incision was made in the right groin, two inches long, parallel with Poupart's ligament, and the tumor found adherent to the parietes. A trocar and cannula failed to bring out the contents of the tumor as they were too thick to flow readily. They consisted of blood, and thick pus which however was not especially offensive. The opening in the tumor was enlarged, the contents broken up with the finger and washed out with a stream of hot water, and the cavity packed with two square yards of iodoform gauze (ten per cent.). The patient seemed almost moribund and a rectal enema of hot salt water and hypodermics of strychnia and whisky were given before putting her into bed. This treatment was continued actively in addition to nutrient rectal enemata for the next forty-eight hours. She vomited only once after the operation, and that was shortly after being put into bed, and though she rallied very slowly, and her heart action is still weak, notwithstanding the constant use of whisky, digitalis, and strychnia, still the gain has been steady and constant. Her temperature became normal on the eighth day and has varied very little since. The gauze packing has been removed and the abscess cavity is closing satisfactorily. Whether the abscess originated in a diseased condition of the tube I am unable to say. The condition of the patient at the time of the operation was not favorable for merely exploratory purposes. That a hæmatoma in what appeared to be a sealed cavity should undergo purulent degeneration is contrary to what is usually taught concerning such conditions. It lends a color of probability to the theory that there may be a migration of saprophytic bacteria directly through the intestinal wall and the wall of the hæmatoma to which it had become adherent. This case also disturbs the theory that hæmatoma of the broad ligament does not arise except in connection with ruptured ectopic gestation.

CÆLIOTOMY FOR PUERPERAL SEPTICÆMIA AND PERITONITIS.*

BY CHARLES P. NOBLE, M. D.,

Surgeon in Chief, Kensington Hospital for Women, Philadelphia.

The conditions under which it is desirable to make an abdominal section in the treatment of the inflammatory and septic complications of the puerperal state are as yet not definitely determined. The very practical nature of this subject—practical because of the large number of women who annually lose their lives from puerperal septicæmia—renders it one of perennial interest to the practitioner as well as to the obstetrician and gynecologist. This paper has been prepared at the invitation of your president, with the hope that it, together with the discussion elicited, may prove of service in the solution of some of the problems involved. Cases of puerperal sepsis or peritonitis may be divided into two classes: 1. Those in which some pathological condition is present in the sexual organs of the woman before labor; 2. Those in which these organs are normal.

The first class embraces those cases of sepsis or peritonitis caused by the bruising or rupture of tumors situated in the pelvis, or of pus-sacs or other septic accumulations in the Fallopian tubes, or other pelvic organs. It is unnecessary to discuss this aspect of our subject at length, as there is little difference of opinion concerning it, and the nature of its treatment is reasonably plain. Puerperal peritonitis, due to the bruising or rupture of tumors during labor, has long been recognized, being first called to the attention of obstetricians, perhaps, when it followed the tapping *per vaginam* or *per rectum* of ovarian tumors, which served as an obstruction to labor. Any variety of pelvic tumor (uterine fibroid, ovarian cyst, dermoid, etc.) may be bruised or have its blood supply cut off by torsion of its pedicle and become inflamed or gangrenous, setting up a more or less serious peritonitis. Dermoid cysts are especially liable to undergo inflammatory changes when they complicate a labor, torsion of the pedicle and bruising being the usual causes. The cardinal points to which attention should be called in this class of cases are, that the birth-canal and the lymphatics are not involved; hence, the condi-

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tions present are very similar to those in non-puerperal peritonitis. Prompt operation, with the removal of the tumor, has been followed by a high percentage of cures.

Puerperal peritonitis due to the rupture or bruising of pus-sacs or other septic accumulations in the uterine appendages, existing prior to labor, is not of frequent occurrence. This phase of our subject has not been systematically studied. The references to it in the literature are scanty. In 1891, in a paper entitled, *Salpingitis considered in its Relation to Pregnancy and the Puerperal State*, I discussed this subject, and reported three cases in which the bruising of pus-tubes during labor had set up peritonitis. I have personal knowledge of two other cases which occurred in this city. Of thirty-two eminent American gynæcologists, from whom I have received replies to a letter of inquiry concerning this among other subjects, I find that but three of them, Dr. Hirst of Philadelphia, Dr. W. E. B. Davis of Birmingham, and Dr. Edward Reynolds of Boston, have operated for peritonitis due to a pus-tube which had antedated labor. Each of these gentlemen operated upon one case. Dr. Coe of New York reports that he has assisted at such operations. My other correspondents either had no personal knowledge of such cases, or at the most have merely suspected that the diseased tube may have antedated the labor instead of resulting from infection after labor. This experience of my correspondents, together with my own, is, I think, conclusive evidence that this variety of puerperal peritonitis is not common, and therefore its importance is not so great as was anticipated some years ago.* The comparative infrequency of puerperal peritonitis due to this cause is explained by the fact, that women having even a single pus-tube, or other septic accumulation in the pelvis, are usually sterile.

* In preparing this paper use has been made of material collected by means of a circular letter, which was sent to many eminent American gynæcologists. Replies have been received from thirty-two of them, as follows:

Drs. W. M. Polk, Egbert H. Grandin, Andrew F. Currier, Robert A. Murray, Hermann J. Boldt, Malcolm McLane, Henry C. Coe, J. C. Edgar, Paul F. Mundé, W. R. Pryor and A. Palmer Dudley, of New York; Drs. B. C. Hirst, J. M. Baldy and E. E. Montgomery, of Philadelphia; Drs. Howard A. Kelly and J. Whitridge Williams, of Baltimore; Drs. James H. Etheridge and E. C. Dudley, of Chicago; Drs. Edward Reynolds, J. R. Chadwick, E. W. Cushing and William H. Baker, of Boston; Dr. J. H. Carstens of Detroit, Dr. A. L. Smith of Montreal, Dr. J. H. Kellogg of Battle Creek, Dr. W. E. B. Davis of Birmingham, Dr. R. S. Sutton of Alleghany, Dr. S. C. Gordon of Portland, Dr. M. D. Mann of Buffalo, Dr. Archibald MacLaren of St. Paul, Dr. R. B. Maury of Memphis, and Dr. H. D. Fry of Washington.

The grave dangers resulting from the bruising or rupture of a diseased uterine appendage during labor, render the occurrence of a pregnancy, in a woman the subject of such conditions, highly undesirable until the diseased organ has been removed. Parturition under these circumstances is too dangerous to be encouraged, and conception should be avoided until the source of danger has been removed by operation.

The relative dangers of puerperal peritonitis of this variety, and the results of operation done for it, can not be determined at this time. The subject is too new, and our experience is too limited for more than inferential opinions. Theoretically the prognosis from operation should be relatively good, because as the uterus and pelvic connective tissues are not involved, the conditions are more nearly those of operation for peritonitis in a non-puerperal woman. At all events, it is a safe conclusion, that the proper method of treatment to be pursued is prompt operation, irrigation and drainage.

The second class of cases, in which sepsis or peritonitis results from infection of the birth-canal, in women having normal sexual organs previous to labor, is a far more important one than that just considered. This is the common type of so called puerperal fever. It embraces cases in which the infection is limited to the utero-vaginal canal, those in which the infection has spread to the broad ligaments through the pelvic lymphatics or veins, and those in which the infection has spread to the peritonæum, either by way of the Fallopian tubes or by way of the lymphatics. Because it is convenient we will consider first, cases of puerperal peritonitis, which, as we have seen, may arise either through the spread of the septic inflammation by way of the Fallopian tubes to the peritonæum, or by infection spreading through the lymphatics either directly through the uterus to its peritoneal covering, or by way of the lymphatics of the broad ligaments. I am not aware of any investigations which have definitely determined the clinical history of the two varieties of puerperal peritonitis to which reference has been made. I believe it is true that in the first variety (by way of the Fallopian tubes) relatively speaking, the inflammatory element is more, and the septic element is less, marked, whereas the reverse is true in the second class of cases (by way of the lymphatics). In the first class of cases, I believe that it is common to have marked efforts at localization of the peritonitis, by means of the pouring out of inflammatory lymph, and that where this result is accomplished many of these cases go on to a natural cure, and that more of them result in the formation of post-puerperal pus-tubes and of

circumscribed intraperitoneal collections of pus. On the other hand, in the cases in which septic lymphangitis is a marked feature, the element of peritonitis is merely an epiphenomenon, the condition present being a general septicæmia.

Puerperal peritonitis of the first class may end in death or recovery within a few days, or it may continue for several or even many weeks. Lymphatic peritonitis is of relatively short duration, many cases having a fatal termination after a course of a few days. Bearing these facts in mind, I find no evidence that abdominal section has been performed for lymphatic peritonitis in any considerable number of cases. The reports of cœliotomies for puerperal peritonitis with which I am most familiar show that the operations have been done in general after the end of the first week; in other words, at a time in which women the subjects of lymphatic peritonitis have either died, or have begun to recover. As supporting this inference I find that among my correspondents only four—Drs. Boldt, Polk, Carstens and Etheridge—have performed cœliotomy for general peritonitis within seven days after labor, and only four—Drs. Smith, Etheridge, Polk and Baldy—have operated for localized peritonitis within the same limit of time. Seventeen of them have operated for puerperal peritonitis later than the seventh day of the puerperal period.

Lymphatic puerperal peritonitis is not amenable to treatment by cœliotomy. I know of nothing, either in my own experience or in the literature, which gives the least encouragement for operating upon this class of cases. All that have been operated upon have died. It is not difficult to understand why operation done for lymphatic peritonitis should accomplish so little. A simple cœliotomy, with washing out of the peritoneal cavity, does not influence the principal seat of trouble, which is in the uterus and pelvic lymphatics, and necessarily it can not influence the multiplication of germs which already may have entered into the general circulation. The more radical operation of hysterectomy offers but little in these cases, as by the time peritonitis has become a marked feature, either the patient is so reduced as to be unable to withstand the shock of a serious operation, or she is already suffering from well-marked general septicæmia. These cases should be operated upon at a much earlier stage, before the development of peritonitis or marked general septicæmia. Cases of puerperal peritonitis in which the septic element is less marked are more amenable to treatment by operation. Polk and Outerbridge have reported successful cases of cœliotomy for localized

peritonitis done within the first week after labor, and many cases are on record in which cœliotomy has been performed for localized peritonitis at a later period. I have nothing new to offer concerning the indications for operation in puerperal peritonitis. So far as I know patients operated upon for general peritonitis have died; hence, excepting the hope that the diagnosis may be wrong, one would hardly be justified in recommending operation with such a diagnosis. In cases of localized peritonitis, during the first few days of the attack, cœliotomy should be done if the attack be a severe one and does not yield promptly to treatment. In cases presenting well-marked local lesions, to be made out by a bimanual examination, the indication for operation is more urgent than in those in which nothing can be determined by examination. In my judgment such cases should be carefully studied, and operation be elected or rejected because of the conditions present—the symptoms and the general course of the case—rather than in accord with any rules applied to such cases in general. Cœliotomy is certainly indicated if the attack of peritonitis be a severe one, which does not yield promptly to medical treatment. Also, later in the course of puerperal peritonitis, operation is indicated if the patient fails to improve, and is demanded should the case take an unfavorable course. In such cases, however, it should not be forgotten that bimanual examination will usually disclose marked local lesions.

At the present time it is safe to conclude that the prognosis of cœliotomy done for general puerperal peritonitis is fatal. In cases of localized peritonitis it is best in those cases in which the inflammatory process has become well localized, and in which sepsis is absent, the case having resolved itself into one of pyosalpinx, abscess of the ovary or pelvic abscess of puerperal origin. The prognosis is fairly good in cases of circumscribed peritonitis operated upon promptly, that is within two or three days. Cases which have gone from bad to worse, and in which the operation is done as a last resort, usually terminate fatally.

We have still to deal with cases of infection of the birth-canal, in which the progress of the disease is from bad to worse, in spite of irrigation and curettement of the utero-vaginal canal. In these cases septic intoxication, or beginning septicæmia, are marked features, absorption of ptomaines or of micro-organisms taking place from the uterus or vagina. In these cases peritonitis, cellulitis, or lymphangitis, are either absent or in their incipiency—the infected uterus is the nidus of the morbid process. Some years ago such a case would have

been treated by a continuance of the irrigation and by internal medication. Under this method of treatment undoubtedly a few cases have recovered, but in the great majority, when, in spite of curettement and thorough irrigation of the uterus, the septic process increases instead of diminishing in intensity, the issue is a fatal one. The proposition to perform hysterectomy in such cases, and thus to remove the seat of the disease, has the merit of being logical. This proposition has been carried into effect by Kelly and Smith with a favorable result, and by Montgomery with a fatal issue. I have read of another successful case in the hands of a German operator, but am unable to find the reference. In these cases abdominal hysterectomy was performed. In Kelly's case there was a beginning lymphangitis, in Smith's a beginning peritonitis, and in Montgomery's pus was found in the uterine sinuses.

At the present time I am prepared to advocate the performance of hysterectomy for infection of the uterus, when, in spite of thorough curettement, followed by copious irrigation of the utero-vaginal canal, and the use of an iodoform suppository and gauze within the uterus, the septic symptoms increase in severity. In general, the less radical measures of treatment should be employed for twenty-four or forty-eight hours, this time limit to be varied according to the severity of the septic symptoms. In such cases, not only should the uterus be curetted and douched, but the patient should be well purged with salines. The use of quinine, baths, and anodynes should not be neglected. In all such cases, the general condition of the patient, including the pulse, temperature, stomach and *morale*, is the best guide in deciding for or against the immediate resort to hysterectomy.

At this time the great success which has been achieved in hysterectomy, done by way of the vagina, for non-puerperal conditions, in the hands of the French school of surgeons, raises the question whether or not this method of operating should not be selected in puerperal cases. Experience alone must determine this question. This is one of the problems of the future, as only a small number of cases have as yet been operated upon by the lower route. Upon theoretical grounds, I am not inclined to advocate hysterectomy by the vagina for puerperal infection, as when it is employed we are precluded from inspecting, irrigating and widely draining the peritoneal cavity. This method would best fulfill the indications when employed very early in the course of the disease, when the chances of peritonitis would be small and the necessity for extensive drainage of the peritoneal cavity absent.

Because of the time saved, the use of the method of forci-pressure instead of the ligature is indicated.

The advocates of the vaginal route for removing the diseased structures from the pelvis will undoubtedly take issue with the general position, that abdominal section is the operation indicated to deal with the various consequences of puerperal septic inflammation. I am prepared to agree with them that large pus accumulations can be more safely dealt with by way of the vagina than by operation from above, but with this exception, from my point of view, the preferable method of operating for puerperal septic inflammation and its results is by cœliotomy.

The present status of the subject of cœliotomy for puerperal septicæmia and peritonitis may be summed up as follows :

Cases may be divided into two classes—

(a) Those having morbid conditions in the pelvis antedating labor, such as tumors, pus-tubes, or other septic accumulations, the bruising or rupture of which during labor leads to peritonitis or septicæmia. Prompt operation in these cases has given good results.

(b) Those having normal pelvic structures at the onset of labor. The infectious process may spread through the lymphatics to the peritonæum, and give rise to peritonitis, to cellulitis, and to septicæmia. It may spread by way of the Fallopian tubes to the peritonæum, setting up peritonitis. Or it may be limited to the utero-vaginal canal. Cœliotomy is not indicated in lymphatic peritonitis, as the morbid process is too widespread to be reached by operation. Cœliotomy has been followed by a fatal result in cases of general peritonitis. The only ground for advising operation with such a diagnosis is the possibility of a mistaken diagnosis. The prognosis is best when cœliotomy is done for localized peritonitis, when the process has become well circumscribed and the element of sepsis eliminated ; in other words, when the case has resolved itself into one of pyosalpinx, abscess of the ovary, or pelvic abscess of puerperal origin. The prognosis is good when cases of localized peritonitis are operated upon promptly, that is within two or three days. Cases which have gone from bad to worse, and in which the operation is done as a last resort, usually terminate fatally. Hysterectomy is indicated for those cases in which the infection is limited to the utero-vaginal canal, when, in spite of thorough curettement of the uterus, together with copious irrigation of the utero-vaginal canal, and the employment of proper systemic treatment, the infectious process increases in severity.

In dealing with the results of puerperal septicæmia by operation,

cœliotomy affords the opportunity for satisfactory diagnosis and adequate treatment. The organs involved may be palpated or inspected, and when necessary the operation may be completed by thorough irrigation and satisfactory drainage. The vaginal route for operation is indicated for large pus accumulations which are found late in the puerperium.

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HYSTERECTOMY FOR PUERPERAL SEPTICÆMIA ;
SPECIMENS.*

BY J. M. BALDY, M. D.

This first specimen to which I will refer is from a young woman, about twenty-five years of age, who had a miscarriage two weeks previous to the time I saw her. At that time she had become septic ; the usual symptoms had developed and she was brought to the hospital in this condition. Her pulse was 125 to 130 and temperature from 103° to 104°. She was in a pretty bad state, and after studying her condition, I concluded that her only chance of life was the prompt removal of the source of the sepsis, by removing the sexual organs and preventing further infection. There was a large amount of discharge, the uterus was enlarged and the appendages adherent and apparently fluctuating. I believed that the woman was in such a condition that even if she were found not to have pus-tubes, the operation would be necessary in order to remove the uterus. I was the more induced to take this view on opening the abdomen : the tubes contained pus, the uterus was large and soft and the site of septic changes. I removed both the uterus and appendages in about the time, certainly not more than ten minutes more, that would have been required to do a double oöphorectomy. The patient did very well for the first four or five days. She had considerable cough when she came into the hospital, and on the fifth day after the operation, she developed a pneumonia. She had double pneumonia and died two weeks after the operation. There was complete consolidation of three out of the five lobes of the lungs and all who examined the specimens pronounced it to be not a case of septic pneumonia. The woman, barring the complication of the pneumonia, would have recovered from the operation and from her condition of extreme sepsis.

In this case the uterus, on being opened, showed points of suppuration and contained a part of the sloughing placenta, which you can see *in situ*.

The second case came under my care ten days after a miscarriage. The previous case had been one of criminal abortion in an unmarried girl, the present case was in a married woman and it is uncertain how

* Read before the Philadelphia Obstetrical Society, March 7, 1895.

it was brought about. She was brought into the hospital and curetted soon after entering the ward by another member of the staff. There was some improvement in her condition for a day after the curettage ; but at the end of this time she was transferred to the surgical wards for surgical treatment. At my examination, which was five or six days after the curettement, I found an exceedingly large uterus ; the broad ligaments were involved but there was no evidence of pus-tubes ; the site of the trouble was in the broad ligaments themselves. The operation showed this view to be correct ; the broad ligaments were infiltrated and contained pus to the pelvic walls. In other words, there was present a condition which only occurs in the puerperal state—a pure cellulitis. This patient died very soon ; the septic condition was very marked and she died of septicæmia.

These two cases represent two classes of conditions in the puerperal state which we are called upon to treat surgically. There is another class in which the uterus alone is involved and infection is limited to it ; the ovaries and broad ligaments are not affected. I have never been called upon to operate upon a case of that character, and it is an open question in my mind how far operation would be justifiable. It seems evident that where pus is found in the broad ligaments, ovaries or tubes, the abdomen should be opened and the organs removed and, if the broad ligaments are involved, it is better to go on and remove the uterus with the appendages. If the suppuration is in the uterine wall, I am again very clear that the only thing to do is to remove the uterus. If there is a limitation of the abscess so that you could remove the portion affected, or open and drain it, the case would be different ; but in cases like this, where the amount of pus was small and distributed among several spots in the uterine wall, you could not determine how far the suppuration extended, or how much to remove. Therefore, the only thing to do is to remove all the sources of septic infection. Where the inner surface of the uterus alone is affected, it is an open question whether or not operation is justifiable. It is hard to lay down any hard-and-fast rule ; each case must be decided upon its own features and conditions : in the former class, curettement may do away with the source of infection and will be sufficient ; but, in cases as in this one, where the curettement is not followed by improvement and the case goes on with symptoms of septicæmia steadily increasing, it does seem that the woman should not be allowed to go to the inevitable end when you can do a hysterectomy in a short time and with comparatively little shock. If the curettement has not done good and the patient is

evidently going to become a dying patient, it seems to me that as soon as we are convinced that this is the case we must resort to hysterectomy.

Both of my cases died. The first case was not dangerously septic after the operation, but died with pneumonia, an accidental complication. She would yet be living had this pneumonia not supervened and, as far as treatment of her septic condition is concerned, she was cured by the operation. I believe that in these cases where the broad ligaments are involved, with depots of pus in the ovaries or walls of the uterus, the operation affords worse results than where the pus is confined to the tubes themselves; because, in the latter case, the foci of infection can be cleaned out perfectly by an operation.

It seems certain that if these recommendations are carried out, a certain number of unnecessary operations will be done; cases that are dying, or cases in which curettement would have answered the purpose. I do not mean to say that this operation should be done promiscuously in these septic cases, but an expert should be given an opportunity to see them early so as to be able intelligently to determine upon any operation, whether major or minor. I believe that unless this safeguard is provided a great deal of harm may be done. There can be no doubt that there are a great number of cases of fatal sepsis occurring after abortions and I think that a legitimate attempt should be made to save at least a certain number of these cases. I believe in a few years that it will be done in the direction indicated by these remarks.

There is one other point in these cases of cellulitis, as observed in my own experience; cellulitis is a very rare condition except as a complication after abortion or labor. It never occurs except in the puerperal condition. Its course is rapid; the case rapidly gets well or soon dies. It never exists as a chronic condition. In such cases there are no adhesions in the abdominal cavity. It has been stated in certain cases that the Fallopian tubes are found with the fimbriated extremity patulous and that the pelvic condition is secondary to a former cellulitis; the proof that this is secondary being that the Fallopian tubes are open and not closed. I think that this is a fair representation of the position taken by the gentlemen who advance the view of cellulitis.

Now, I have here a very good specimen which shows just what I have been waiting to show for some time. Both of these tubes are patulous and from the open ends creamy pus can be pressed. If this case had recovered and these tubes had been examined after a few

months, it would be thought that no infection could have taken place through the tubes, because the tubes were not closed; the adhesions that existed in this pelvis would have been pronounced as due to extension of the inflammation from a cellulitis—just such cases have been presented to us here as cases of cellulitis. Therefore, the mere fact that fimbriated ends are not closed and the tubes are patulous is not proof that the infection and sepsis has not entered the pelvic cavity through the tubes. On the contrary, experience proves, every day more and more, that these cases are all primarily due to infection through the tubes, and that these chronic cellulitis cases are all a myth. In other words it is perfectly possible for a pelvic inflammation to occur through the Fallopian tubes and for the tubes subsequently to appear perfectly healthy. The specimen before you demonstrates that possibility beyond a shadow of doubt.

SHOULD EXPLORATORY INCISIONS BE RESORTED TO AS MEANS OF DIAGNOSES IN OBSCURE DISEASES OF THE ABDOMINAL CAVITY?*

BY MILO B. WARD, A. M., M. D.

Surgery of the organs situated in the abdominal cavity, has always been, and is likely to continue to be, fraught with a mortality higher than necessary, largely on account of the fact that the profession and the laity have not yet learned to look upon surgery of these obscure organs with the least degree of favor, until all other remedies have failed and the patients are *in extremis*.

It is my purpose to follow closely along the lines of modern conservatism in the presentation of a few thoughts regarding exploratory incisions, or, if it please the profession better, prompt surgical interference in obscure diseases, which I designate as "true conservatism," instead of postponing from day to day this means of diagnosis, in cases presenting lesions which seem to demand surgical interference as the only means of relief, and at the same time are so obscure that the wisest diagnosticians and most experienced operators may fail in their prognosis.

* Read before the Topeka Academy of Medicine and Surgery, January 14, 1895.

The foregoing is so diametrically opposed to the teachings of our authors on surgery that I ought, perhaps, to begin this paper with an apology, and beg the indulgence of the profession when I have finished, on the suggestions made.

It is not my desire to deprecate the teachings of the master minds that have preceded us, or to stand entirely alone among my professional *confrères*, by advocating a means of diagnosis and treatment not in accord with them. Yet, I know of no way of presenting my convictions on this important matter than to state frankly and boldly, that exploratory incisions are so harmless in fact, of such incalculable value as means of diagnoses, and the prevention of grave conditions so liable to intervene in cases of doubt, that they should be resorted to in a large majority of cases that are now permitted to either succumb to the disease, or progress to a stage so grave that surgery is done with the avowed purpose of giving the patient the last chance for recovery. In other words, abdominal surgery in the vast majority of instances, is only performed on dying patients. And yet, in spite of this fact, the mortality of the surgical cases is comparatively very low.

I am not in the least unmindful of the various and complex questions that must be considered in connection with every case under observation by either the physician or surgeon.

Were it possible for us to become so skilled that we would be even reasonably certain in diagnosis and prognosis, without operations in the early manifestations of the lesions, and before patients get beyond the safety line, then the knife should be the secondary, rather than the primary resort. Perhaps it is true in a few instances, that surgeons have become so skilled and experienced in the diagnosis and treatment of these conditions, that the knife is only used in cases clearly indicating surgical operations as the altogether wise, if not the only thing to do.

Such skill, however, must of necessity be confined to such a limited number that the great mass of mankind can not thereby be benefited.

Surgery in the abdomen has been subjected to the opprobrium of all classes of society as well as a large majority of the medical profession, on account of deaths that occur here and there, that are, but usually unjustly, charged to the surgery done. One feature deserving praise in this connection is that the lay members of society, or the friends of the unfortunate patients, are usually honest enough to admit that the operation was postponed until it was too late. While this statement may be, and, I think, is true in the large majority of cases,

it does not exonerate the attending physician or surgeon, even if it should apparently relieve the operator, who may have been called in at the last moment, from being charged with the responsibility of the death. Surgical mortality, however, regardless of circumstances, is greatly to be deplored, because of the loss of the patient, and also the injury done to surgery.

No fact in all teachings of science is more apparent than that surgery is charged by a certain percentage of observers, with every death that follows surgical interference, regardless of the condition of the patient at the time of the operation. It is not, therefore, because there is so much surgery done, that every daily paper brings us tidings that some friend or acquaintance has died of inflammation of the bowels, or appendicitis, which the laymen interpret, "the new-fashioned disease," but because of the utter absence of surgery in most of these fatal cases.

The foregoing being true, one of two things should be done: either refuse to operate on all cases that do not promise reasonable hope for recovery, or, use our best efforts to educate the profession and the friends, to the belief that early operative interference should be resorted to in nearly all cases presenting grave symptoms.

If surgeons were to establish an unwritten law that they can not afford longer to risk their reputation as operators by attempting to save life, when all other means have failed, and the patient is rapidly sinking and must soon die without the operation, a lesson would thereby be taught of incalculable value to all concerned.

No one fact in all my professional experience has impressed me more forcibly than the statement once made by the Professor of Surgery in the college where I graduated, to the effect that "the knife never kills anybody." The thought implied is, that the patient's chances for recovery are never lessened by judicious surgery.

The largest burden of this whole matter rests upon a number of conditions, to wit: the environments favorable; the operators skilled to perfection; the after-treatment and care of the patient intrusted to skilled nurses; and the patient's vitality at least fair and free from shock, before the operation is attempted.

Modern methods of dealing with intraperitoneal lesions are so generally understood by the progressive members of the profession, that in every State, and almost every county and town, surgeons may be secured who have had more or less experience in the treatment of these organs, and can go to the relief of suffering humanity with almost the speed of lightning, if attending physicians will learn the

sad lesson, that procrastination in connection with obscure diseases of these organs more frequently than otherwise, means death.

It has fallen to the lot of every experienced surgeon, to have been called to cases of appendicitis, ovarian abscesses, extra-uterine pregnancies, strangulated hernias, obstructions of the bowels, and various complications due to traumatisms, only to be informed that the patient has been ill for several days, and everything has been done by way of manipulation and medication to save life, and now the last hope has gone, and the friends wanted a surgeon called. What is to be done under these trying circumstances? Only one of two things : either refuse to operate and return home—the wisest if not the most humane thing to do in such cases—or proceed to open the abdomen under the plea that nothing is promised by the operation, save the remotest possibility that the patient will rally subsequently. This latter step gives the patient the only chance possible, but at the risk of the surgeon's reputation. And to refuse to operate, surgery is liable to be charged with cowardice, for not operating except under favorable circumstances. In other words, the trite but ever-apt saying, "you will be d—— if you do, and d—— if you don't," comes in very well. We are therefore reminded once again of the importance of the subject under consideration, namely : that the only salvation for the people and for surgery, is, never to postpone till to-morrow what should be done to-day.

I am frank to confess that the number of skilled surgeons scattered throughout the land is at this time too limited, and earnestly express the hope that the time will soon be at hand, when the practice of medicine and surgery will be so scientifically divided, that the number of specialists in all branches will be largely increased, thus assuring that the greatest possible skill will be obtainable for suffering mankind. To bring about this desideratum, the lines of demarcation between specialists of various kinds and general practitioners must be more closely drawn. I wish to be understood by this to mean that surgeons who desire to prepare themselves for abdominal and pelvic work, expecting to receive the patronage of specialists in other lines, and general practitioners, should waive all pecuniary considerations, by sacrificing their general practice on the altar of more thorough attainments in their special work.

For fear that I may be charged with a spirit of criticism, by attempting to suggest what others should do, permit me to qualify my suggestions by saying that this can only hold good in cities and large towns. I also wish it to be understood that, oftentimes it is necessary

in cases of extreme emergency, to call to one's aid surgeons who have not had that extensive experience that is so desirable in abdominal surgery.

If I correctly interpret the handwriting on the wall, the time is not far distant, when skilled men will receive such support by other members of the profession not desirous of undertaking this branch of surgery, that operators will be found almost everywhere, rich in experience and cultured in the technique of surgery of these obscure organs.

It has frequently been stated by those whose experience has taught them that such serious complications may be met, in dealing with apparently simple lesions of abdominal organs, that no surgeon should attempt coeliotomies, unless he is in possession of every facility to successfully deal with them. In other words, it is well to bear in mind, that an exploratory incision for diagnostic purposes, is followed by a complete operation after diagnosis has been made, in all cases where indications point to the wisdom of completing, that which was primarily attempted for another purpose.

It was not my intention to make suggestions regarding complete operations on intraperitoneal organs, but there seems no way to entirely separate these subjects, and at the same time make a thesis at all comprehensive.

The whole matter may be summed up in one brief sentence : *Danger to the patient does not result from judicious surgery, in any case, whether done early in the disease or after the symptoms point to grave complications. It is a fact, therefore, that the mortality, the result of lesions of intraperitoneal organs, is extremely high, on account of the tendency of the profession and the friends to postpone operative procedure, under all circumstances, as long as there is any hope expressed by the attending physician for recovery following more simple remedies.*

THE TREATMENT OF BLENNORRHŒA OF THE NEWBORN.*

BY W. F. MITTENDORF, M. D.

The importance of an early recognition and the prompt treatment of blennorrhœic inflammations of the newborn is of such importance that I hope to be excused for bringing this subject before you to-day.

* Read before the New York State Medical Society, February 5, 1895.

It is a well-known fact that heretofore this form of disease of the eye has caused more cases of blindness than any other eye trouble, as the statistics of Magnus of Breslau have proved, and yet it is one of the preventable diseases; and furthermore it is one which under prompt and proper treatment will yield readily to our remedies, and in the hands of experts hardly any eyes are lost. It is therefore of great importance that the disease should as much as possible be prevented and for this purpose two ways should never be lost sight of: the first is thorough cleansing and disinfecting of the vagina and everything that comes in contact with the newborn child—in short, thorough antiseptic midwifery.

Yet perfect antisepsis is not always possible; either the delivery of the child may be so tedious that the head of the child is detained in the vagina for hours and thus exposed to newly formed poisonous secretions or the delivery may be so rapid that the child is born before the physician is able to reach the bedside of the mother. It has been found that on account of tedious labor blennorrhœa of the newborn is observed more frequently among the children of primiparæ, especially if forceps had to be used, and more frequently among boy babies than girls, as the former have as a rule larger heads and their delivery is consequently more difficult and tedious. However it is perhaps not only due to the tedious nature of the confinement of primiparæ that their children are more frequently affected than those of other mothers, it is perhaps to a great extent due to the fact that these mothers have been more exposed to the deleterious influence of a latent gleet or gonorrhœal discharge of the male, which the teachings of the late Dr. Noeggerath, of New York city, have proved to be at the bottom of so many afflictions of the genital organs of the female and which give rise to the leucorrhœal discharge of the pregnant woman.

In looking over the records of more than three hundred cases of blennorrhœa neonatorum, which I had collected some time ago, I found that the percentage of the disease among the offspring of primiparæ was nearly sixty-five per cent. and that of other mothers only a little over thirty-five per cent., which is all the more striking as these mothers form the great majority of all parturient women.

In regard to the *prophylactic treatment* of the infants' eyes, nothing can be compared to Credé's method, which consists in dropping one or two drops of a solution of nitrate of silver (ten grains to one ounce of water) from a glass rod into the child's eyes after it has been bathed and thoroughly cleansed otherwise. The result of this treatment has

been so satisfactory, that at the Sloane Maternity Hospital there has not been a single case of severe blennorrhœa of the eyes in 4,100 confinements, according to Drs. McLane and Tucker.

To be sure, infection may take place through bringing the eyes of the infant in contact with the lochial discharge of the mother, but even in these cases it is necessary that there should be a specific poison in the discharge, as pure pus, or even putrefying material, can not set up a blennorrhœic process in a healthy eye. The occurrence of a purulent conjunctivitis even at the time of birth is sometimes met with ; it is probable that in these cases the vaginal discharge was carried into the eye by the finger of the examining surgeon, which is not at all unlikely in cases of face presentation.

In lying-in asylums and other public institutions which used to present most of these cases, the disease has been almost entirely obliterated through these precautionary measures. A great deal of praise is due to Dr. Garrigues, who was the first to introduce Credé's method into this country, and who called attention to it in a paper, based on a large personal experience with it at the New York Maternity Hospital on Blackwell's Island. During one year out of 350 confinements there occurred only one case of ophthalmia neonatorum and in this case the mother had been delivered by one of the assistants who had neglected to apply the nitrate of silver to the baby's eyes. Dr. Coe writes me that Credé's method is now constantly in use at this hospital, where one would look naturally for cases of this kind, and states that in his last service he did not have a single case of blennorrhœa neonatorum ; although several occurred during the previous years, probably because Credé's method had not been very faithfully applied.

However, the disease is still of too frequent occurrence in private practice, especially among the poorer classes, where the midwife is so often the only attendant.

Thanks to the efforts of the Congress for Hygiene, which in 1884 gave a prize to Dr. Fuchs for his essay *On the Causes and Prevention of Blindness*, many European governments require the midwives to report all cases of inflammation of the eyes of the newborn, *even against the wishes of the parents of the child*, and in our State a law has been passed through the efforts of Dr. Howe, of Buffalo, making it obligatory for the midwife to report such cases to the health authorities. If this would be done promptly in all cases of this kind and proper medical treatment at once resorted to, we would have hardly any cases of blindness from this source ; for it is the experience of all

ophthalmologists that these cases will, as a rule, make perfect recoveries, especially if the child is seen early and the disease treated carefully by competent physicians and left in charge of good nurses. Unfortunately there is, in spite of all legislation, yet too much of this disease in existence, and I have seen during the last summer three eyes lost in private practice which was not composed of the lower strata of society. There must be consequently something wrong in the treatment of this terrible disease by the family physician, or I should rather say that in all probability his instructions are not carried out carefully enough by the parents of the child to prevent such sad results. It is on this account that I want to bring before you to-day a plan of treatment which has many advantages and which has given in my practice, including many cases of this kind, great satisfaction, and which on account of its cheapness and ease of application deserves to be better known than it is now. It is the use of the boric-acid ointment applied as frequently as possible.

The indications to be met with in the treatment of ophthalmia neonatorum is, of course, in the first place cleanliness, and in the second place the prevention of accumulation and the retention of the secretion in the eye. If these two things are never lost sight of, the disease will yield promptly, and no danger to the sight of the child will occur. Professors Schweiger, Horner, and others report that they have not lost a single eye of an infant after they took charge of the case, and nearly every ophthalmologist will agree with them on this point; but, unfortunately, the eyes are lost before the specialist sees the patients, and it is apparent that the gravity of the disease is not always sufficiently appreciated by the obstetrician, and of course not by the midwife; if it was, the preventive method of Credé would be universally employed. A gentleman, who has had a great many confinements, assured me at one time, that he had never had the slightest difficulty with these cases, that once in a great while he would have to use a little alum wash; but that Credé's use of nitrate of silver in his private practice was entirely out of the question. He had occasion to change his mind very soon after our conversation; for a child, the firstborn of one of his best families, got sore eyes, which he treated in his usual way, but which did not get well, and although he gave the parents the assurance that everything was all right and that there was no danger, he thought at last it would be well to call me in consultation, when to my great horror I found that both corneæ had been perforated in the center, that the iris had prolapsed, and that the child's eyesight was irreparably lost.

Some of my colleagues have called Credé's method an unnecessary cruelty; I think it is the greatest cruelty to omit this simple plan of treatment, which is not nearly so painful as vaccination and yet may confer as great a blessing as this does; in fact, it should never be omitted if the mother has had a leucorrhœal discharge, or if it is known the father had gonorrhœal trouble at any time of his life. I think that Credé should be classed among the great benefactors of mankind, and his name should never be forgotten by the grateful obstetricians, especially those of public institutions and asylums which used to be such great sufferers from this dreaded disease.

The ideal medical treatment of this form of ophthalmia consists in the use of cold compresses to the eyes, the cleansing of the conjunctival sac about once every hour, and the use of a two- or three-per-cent. solution of nitrate of silver to the everted lids, and especially to the upper *cul-de-sac* of the conjunctiva. This is the established and universally recognized treatment; but it presents so many difficulties, if it has to be done at the child's home, that I have long been looking for a simpler plan of treating such eyes. In the first place the cold applications must be made so faithfully and persistently during the very acute stage of the disease, that it would require the services of two trained nurses, which would be in many cases too much of an expense, and again, if the child is very weak, the constant use of cold to the eye might have a weakening effect upon the vitality of the cornea. Yet there is no other way of reducing the intensely swollen condition of the lids in the earlier stages of the disease. The second indication, the cleansing of the conjunctival sac, is a matter of great importance, and in order to do it thoroughly the upper *cul-de-sac* should be cleaned as thoroughly as the lower one; this requires, however, some skill, and could not very well be intrusted to everybody, and is an especially difficult task if the upper lid is very much congested and infiltrated. In order to avoid all these difficulties I have used an ointment made of one part of finely pulverized boric acid to nine parts of vaseline.

This boric-acid ointment is to be introduced into the eye by means of a silver or hard-rubber probe or by means of an ordinary knitting needle, or with the quill part of a medium-sized chicken feather, but never by means of a camel's-hair brush, as the hairs are apt to break off and getting into the eye might give rise to serious complications. The applications should be made every five or ten minutes, according to the severity of the case, night and day. One of the greatest difficulties in these cases is the tendency of the lids to become firmly

glued together; the lids are apt to be hot and swollen; the conjunctival secretion is therefore liable to evaporate, especially at the point of contact, namely, the free edge of the lid, and as the infant is not able to open the lids or move them even, they become soon, sometimes within a few seconds, firmly glued together. The secretion is retained and acts not only like a poultice to the eyeball, but it must exert a very injurious effect on the cornea. This is under such high pressure, that if the lids are forcibly opened, the secretion will squirt out with such force that it will be frequently thrown some distance and sometimes into the face and even into the eyes of the attendants, especially when they are bending over the infant, but sometimes even when they are quite a little distance off. It is hardly necessary to state that this constitutes a great source of danger to the attendant's eyes, and if by using the ointment this danger is done away with, it is quite an advantage, as I know of quite a number of eyes lost by the nurses and even the attending physicians. But the main indication for the use of the boric-acid ointment is that after its use the lids can not stick together; the secretion flows off as soon as it has formed and is no longer retained in the eye, where it would be a constant source of danger of infection to the corneal tissue. In order to avoid this direct infection of the cornea it is of great importance that any injury to this part of the eye or anything leading to the loss of its epithelium should be carefully avoided. However, aside from this, the coating of vaseline of the boric-acid ointment protects the cornea and the antiseptic action of the salve is much stronger than that of a boric-acid solution; in the first place, the percentage of the acid in the salve is much greater than in a solution, and in the second place, it is much better retained in the conjunctival sac. If cold applications have to be combined with the use of the salve, which is the case when there is much œdema of the lids, the salve acts as a protection to the cornea.

In all milder cases the use of the salve would be all that would be necessary in regard to treatment; but in all cases where there is much secretion and when the conjunctiva is much changed and thickened, the use of nitrate of silver will be of great service in keeping the disease under control and will shorten its duration. There are some points in the use of a nitrate-of-silver solution, on which our text-books are not explicit enough, and this is the necessity of applying it to the very highest and remotest point of the upper *cul-de-sac* of the conjunctiva; even in those cases where the upper lids can be well everted, it is necessary to carry the nitrate of silver way up between

the lids and the eyeball, and in those cases where the upper lid is too stiff or naturally very short, and therefore hard to evert, it should be raised gently by traction on its eyelashes and the nitrate-of-silver solution should then be carried way up under the lid and applied to all parts of the fornix of the conjunctiva, from the nasal to the temporal portion of it. In making these applications one should never use a brush for the reasons given before, but the application should be made by means of a small piece of absorbent cotton twisted around a silver or hard-rubber probe, and it is perhaps necessary to say that a new piece should be used for each eye. In order not to give unnecessary pain to the infant a few drops of cocaine should be instilled into the eyes a few minutes before the silver is used and all mucus and pus should be carefully removed by syringing the eye very thoroughly with a boric-acid solution applied by means of a soft-rubber eye syringe. If this is neglected a good deal of the effect of the nitrate-of-silver solution will be lost by forming a coagulum of albuminate of silver with the discharge. After the application is made a short time should elapse before the excess of the solution and the coagula, which formed in the eye, are removed by syringing with a solution of salt or of boric acid. This should never be neglected, for the presence of these coagula in the eye is like that of a foreign body and is sufficient to keep the child in agony for hours. Lastly, an application of boric-acid ointment is made to the eye and, if the child is seen at its home, compresses of iced cloths may be made for some time until the child is perfectly quiet. As a rule I prefer to have the child brought to my office, even in cold weather, no matter how young the infant is, and I have often had occasion to remark how rapidly the child improved in every respect, also in general health, and I have never seen any injurious effect from these daily trips to my office; as long as there is any discharge the nitrate of silver should be applied daily; later every other or every third day will be sufficient. If it is impossible that the physician can attend to the patient every day, a few drops of a weaker solution of nitrate of silver may be dropped into the child's eye once every day, taking care at the same time that the silver solution gets well into the upper *cul-de-sac*. This can be easily done by taking the child's head in the lap and lifting off the upper lid, especially if the head is held a little low.

By carrying out this plan of treatment the disease will lose its dangerous character in from eight to ten days and in three or four weeks a complete cure may be accomplished; whereas the duration of this inflammation of the eye is usually from six to ten weeks.

Corneal complications are always to be dreaded and in the very beginning of the disease a few drops of a weak solution of the sulphate of atropine may be instilled into the eye, partly on account of its anodyne effect, but especially in order to prevent corneal complications. As soon as the cornea becomes affected, which may be in the form of a slight infiltration, which may give the entire cornea a dull hazy appearance, but which shows itself usually in the form of circumscribed whitish patches of infiltration, two or three drops of a two-grain solution of atropine must be used twice or three times a day and its use should be continued until the cornea is quite clear again, even if slight symptoms of atropine poisoning, which are generally ushered in by great redness of the skin extending often from the face to all parts of the body, should show themselves and alarm the parents of the child. However, although it is a generally known fact that small children will stand large doses of belladonna better than adults, great care must be exercised not to carry this too far.

As long as there is no loss of epithelium or any break of the continuity of the surface of the cornea the use of atropine is advisable, but as soon as there is the smallest ulcer of the cornea, the use of the sulphate of eserine is indicated and a solution of one grain of it to one ounce of water should be used five or six times a day, one or two drops at a time. The only exception to this rule is if the ulcer is in the center of the cornea and threatens to perforate; in such a case the use of atropine is to be preferred and if perforations appear unavoidable, especially if the ulceration extended to the membrane of Descemet, which can be readily diagnosed by the glistening appearance of the bottom of the ulcer, a paracentesis of the cornea should at once be performed, either with a paracentesis needle or a narrow cataract knife. This little operation is just as much indicated in these cases, as the paracentesis of a bulging drumhead in a case of acute aural catarrh. In old cases of perforation of the cornea, especially if complicated by prolapse of the iris, the use of eserine is indicated, even if the seat of the perforation is in the center of the cornea and its use must be continued until a firm cicatrix has formed. This treatment will prevent a bulging of the cornea at the point of the scar, which might otherwise develop into a staphylomatous enlargement and might take on such proportions that it would not only become a great deformity, but it might even necessitate the removal of the entire eyeball, if it should become so large that the lids could not close over it.

To recapitulate : Use Credé's method soon after birth, especially

if there has been a leucorrhœal discharge during pregnancy. If the disease has already developed cleanse the eye with a boric-acid or a weak salt solution, apply cold compresses for the first few days continuously, use boric-acid ointment to the conjunctival sac every five or ten minutes night and day and cleanse the eye every one or two hours thoroughly with a concentrated solution of boric acid and apply a two- or three-per-cent. solution of nitrate of silver especially to the upper *cul-de-sac* of the conjunctiva. If the lids can not be everted drop a few drops of a one-per-cent. solution of nitrate of silver into the eye. Lastly avoid all heat either in the shape of hot water or as bandages applied to the eye.

Healthy surroundings and plenty of fresh air will greatly facilitate the cure.

The dangerous character of the discharge of eyes affected with blennorrhœa of the newborn must never be lost sight of and great care must be exercised by the attendants that the discharge is not carried to other persons' eyes and that if only one eye of the child is diseased the infection of the second eye should be carefully guarded against. This is a matter of great difficulty, because on account of the age of the child no protective bandage can be applied. A thorough washing out of the conjunctival sac with a solution of boric acid should be done twice a day, using of course all antiseptic precautions. No less care should be exercised by the attendants to prevent the discharge of the child's eyes from getting into their own and although this danger is considerably less when the boric-acid-ointment plan of treatment is used, which does away with the bursting forth of the retained secretion, if the diseased eye is opened in order to cleanse it or to make medicated applications, yet it would be advisable to put on large protective goggles every time the child's eyes are to be opened. I have seen many an eye lost because this precaution had been neglected not only by the usual attendants but even by trained nurses and medical students. In fact these cases were of such frequent occurrence among the nurses of the Bellevue Training School at one time that the use of protective glasses was made obligatory when attending such cases of ophthalmia.

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EDITORIAL.

PELVIC CELLULITIS.

We feel sure our readers will be interested in the exposition of this subject contained in the able paper of Dr. Harrison, published by us this month, and in the discussion which followed its reading before the Woman's Hospital Alumni Association. This disease, as a very common factor at least in the pathological life of woman, was, as everybody knows, first insisted upon, first systematically treated and its importance consistently taught for the past thirty years by an American. Mr. Tait is generally accredited with having had the most powerful influence in destroying, among a very large number in this country, belief in the existence of this disease, which up to that time had been almost universally accepted by us. The conversion to Tait's ideas of pelvic inflammation was not the result of long and patient investigation; on the contrary, it came with that joyous alacrity which always distinguishes American acceptance of anything foreign which may possess elements of popularity. It is, therefore, not surprising, though a curious commentary upon this national failing of ours, that Dr. Harrison in his advocacy of a general appreciation of the importance of this disease offers, as convincing proof to our intelligence, the expressed investigations and belief of foreigners only.

Let us review the case of *Pelvic Cellulitis* truthfully and dispassionately. It was first taught to be a gynæcological factor of very common occurrence, its recognition insisted on and its systematic treatment described, as we have said, by an American. For, although

the French, particularly, described pelvic abscess which they ascribed to inflammation of the cellular tissue outside the uterus, as far back as the first half of this century, it was an American gynæcologist who first popularized a belief in this condition as a practical factor in the diseases peculiar to women. After we had generally accepted this fact for twenty years, a foreigner, Mr. Tait, denied it with great and decisive contempt and, with our usual national courtesy, many of us were almost immediately converted to the *peritoncal* theory of pelvic disease. And now, this American teaching having been subjected to the investigating mind of foreigners for thirty years and having received the final indorsement of many German authorities, we stand in a fair way, judging from many recent utterances of American writers of note, to give it once again popular acceptance. Dr. Harrison, we know from our personal knowledge, has never wavered in his belief in pelvic cellulitis, but are not the facts which we have here set forth and upon which his paper is, probably, an unconscious commentary, a humiliating spectacle for patriotic Americans and an amusing one for foreigners to contemplate?

We did not mean to discuss in this article the scientific probability of this disease—this will be found fully brought out in the paper and its attendant discussion to which we have referred—but we did wish to use the history of this question as a peg upon which to hang a moral, of the widest application and of which, we believe, American gynæcologists generally stand much in need.

CORRESPONDENCE.

ENORMOUS OVARIAN TUMOR, TWO HUNDRED AND TWO POUNDS IN WEIGHT.

To the Editor of the American Gynæcological and Obstetrical Journal :

SIR: It has often occurred to me to report the following case which I think should be placed upon record, but up to the present I have, from various causes, omitted to do so. Among the physicians present and assisting were Drs. Horr, Donovan, Hill, Oakes, Wentworth and Rankin. The operation was skillfully performed by Dr. Alonzo Garclon, Sr., who is now in his eighty-third year and has been in active practice for over fifty years. So enormous was the growth

that at the first glance it gave one the impression that the patient was entirely secondary to the tumor.

The following letter from the operator's son, also a physician, gives some interesting information in reference to the case :

"LEWISTON, October 19, 1893.

"MY DEAR DOCTOR: Your favor of recent date at hand and in reply will say the patient you refer to was Ella Bradbury of Minot, Me. Have only a few data to refer to. She measured at umbilicus 69 inches and 47 inches from sternum to pubes. Age, twenty-eight. Her normal weight was 115 pounds. On the 3d of July, 1882, A. G. removed 132 pounds of fluid by trocar. July 8th by abdominal incision he removed sacs with contents, which weighed 70 pounds; both ovaries were affected and removed; non-adherent simple cysts. If you remember, her abdomen reached to her knees and had chafed her thighs in front. She had been in the hands of a female clairvoyant for two years previous to her presenting her case. She died on the 10th of July at 6 P. M. She never rallied from the operation, as I recall the case. Think the circulation remained feeble up to the hour of her death. She was in very feeble condition prior to the operation and the step was taken as a last chance. Am sorry not to have been more prompt in replying to your favor. Have been away much of my time lately. Dr. Rankin was also present. I remain
 "Yours truly, A. M. GARCLON."

Dr. Emmet in his work on *The Principles and Practice of Gynecology*, 1884, records the case of a patient upon whom he operated where the tumor weighed 79 pounds and the patient only 90 pounds. This patient recovered from the operation. He states that the average weight of the tumor in Dr. Keith's first hundred cases was 30 pounds; but one of them, which weighed 120 pounds, was removed successfully. This was the largest ovarian tumor which had been operated on up to that time, with a favorable result.

In the *New York Medical Journal* of February 8, 1890, Dr. Charles K. Briddon reports a case of ovarian tumor weighing 149 pounds. Operation. Death.

T. J. MCGILLICUDDY.

776 MADISON AVENUE, NEW YORK.

AN ANOMALOUS FEMALE URETHRA.

SAN DIEGO, CAL.

To the Editor of the American Gynecological and Obstetrical Journal :

SIR : The normal female urethra is about four centimetres in length and six millimetres in diameter and opens beneath the clitoris in a

smooth triangular surface—the vestibule; the opening is in the back part of the space, two and one half centimetres below the clitoris. This meatus urinarius is rounded and puckered and not a vertical slit like that of the penis.

The anomalous condition that we desire to record was observed in a woman aged eighty, primipara, and was discovered accidentally while endeavoring to pass a catheter. The opening of the urethra was at a distance of six and a half centimetres from the clitoris and situated in the median line of the anterior vaginal wall, entirely within the vulvar aperture.

It was a vertical slit analogous to the male urethral opening and was not puckered or rounded. The canal was two and a half centimetres in length and apparently traversed the bladder wall before opening into the viscus, not unlike the course of a ureter. Careful search failed to reveal a urethra normally situated.

The vestibule—the normal site for the urethral orifice—was smooth and without any evidence of the urethral opening, which of course excluded a condition that at once arose to my mind—inflammatory obliteration of the normal urethral canal and the meatus urinarius, and a persistent vesico-vaginal fistula, which was carrying out the function of the normal structures.

A careful study of the case excluded this condition, as there was no evidence of trauma or inflammatory changes.

This is a rare anomaly with practical significance in our everyday work.

Scanzoni (fourth American edition, page 479), reports a defective development of the external genitalia in a woman of flourishing and robust appearance; the meatus urinarius was found very far backward and upward.

Parvin's translation of Winckel's monograph (the original is not accessible to me) mentions malformations, abnormalities or anomalies of the urethra as follows: Complete absence of the urethra (*defectus urethræ totalis*), absence of the inner portion (*defectus urethræ internus*), or of the external part, atresia of the urethra and duplicity of the urethra. The monograph of Winckel is a complete *résumé* of the entire subject.

WILLIAM A. EDWARDS, M. D.,
Fellow of the College of Physicians of Philadelphia, etc.

REVIEW.

MEDICAL GYNÆCOLOGY : A Treatise on the Diseases of Women from the Standpoint of the Physician. By ALEXANDER J. C. SKENE, M. D., Professor of Gynæcology in the Long Island College Hospital, etc. With Illustrations. New York : D. Appleton & Co., 1895, pp. 529.

The general treatise upon diseases of women by Dr. Skene, published a few years ago, met with marked success. It was a success indicated not alone by a demand for a second edition, but by a very general adoption of the work as a text-book in medical colleges. This will cause the present production of his pen to be received and examined with interest, and we bespeak for it a warm welcome from two classes : First, from those who, while neither ignoring nor belittling the triumphs of surgery, still believe that the scalpel is not the only agent for the treatment of diseases of women ; and, second, from that much larger class who, having lacked the opportunities of acquiring the skill necessary for modern operative surgery, desire to treat these diseases intelligently and as far as possible before placing their patients in the hands of specialists.

The work is divided into three parts. Of these Part I carries the subject through childhood and through the great change of puberty up to the entrance upon womanhood. There is much in this part which we should like to see published as a hygienic tract and placed in the households of the land. Heredity, and its important influence, are of course recognized, but the influence of all the environment of the growing girl, of all those particulars that are under our control, as heredity is not, is pointed out and their adaptation directed. Food, clothing, exercise, pure air, above all over-indulgence, are commented upon and good counsel given. As a foreigner, and like all foreigners, he is astonished at the different position accorded to children in this country from any other country in the world. At the earliest age of these "young autocrats of the home circle" he finds the origin of departures from health which terminate afterward in sexual derangements. Well does he say that "self-control is one of the great lessons to be learned in early life" ; yet selfishness is fostered at every step in the girl, and the woman develops a nervous irritation "due to useless desires which can not be gratified" ; she becomes an unhappy discontented being, "even her prayers to God are pleadings for

blessings which she neither needs nor deserves." All this faulty rearing, physical and mental, results in imperfect development of the young woman's reproductive system, the leading system of her organization, and imperfect development is a fruitful cause of the afflictions of after-life.

"My own observations show that the vast majority of incurable diseases peculiar to women originate in imperfect development and the consequent derangement of function."

The necessity of thorough and complete development of the general system is insisted upon as the only means of insuring the health of women: "The highest organic perfection of the sex can only be obtained indirectly through the general system."

There can be no question, then, where Dr. Skene will be found in the contest continually going on in this country between teachers and physicians. We must accord to educators honesty of intention, but surely pride of profession causes them too often to be active agents in checking the development of the growing girl and promoters of disease, by pushing the nervous system at the expense of the physical. We wish that here the author had been more specific in regard to music. While the evil effects of the modern system of education are duly recognized, it would seem that this branch deserves especial animadversion because it is so general an addition—as a "home influence"—to the labors of the schoolroom, because of its many hours daily of practice with constrained position of the body, and its undue influence in developing the emotions. And all this for an accomplishment which not one girl in twenty carries beyond mediocrity or pursues with pleasure to herself and others in after-life.

Part II is by far the largest division of the book, occupying about four hundred pages. It opens with chapters upon such subjects as Sexual Characteristics, Structural Differences between the Sexes, Natural and Sexual Selection, and passes on to others, as, Methods of Examination, the Agents for Gynæcological Treatment, Hydrotherapy, Electricity, Muscular Exercise, Massage, and Diet. Then are considered the Disorders of Menstruation and other diseases in order. As the most practical, *i. e.*, practical in the sense of directing therapeutic resources, this portion deserves far more extended notice than we can give it. Some chapters, however, in justice to the author, must be briefly considered. The one upon Mental Therapeutics is both interesting and important. The great influence exerted by the mind of the practitioner upon that of the patient, and the value of "suggestion" as a remedy, are fully recognized. The

"ability to inspire confidence and obtain control over patients is the mental therapeutics of every-day practice." The foundation of this is laid down earlier in the book by a distinct recognition of the preponderating influence of nerve-action over blood-supply in diseased processes :

"I am led to believe that nerve influence upon the cells and their protoplasm is the chief factor in making them perform normal work—far more so than blood-supply" (p. 62).

While recognizing, then, the extravagance of the popular craze in regard to faith and mind cures, the folly of those who look to them for the relief of organic disease, and the positive injury too often resulting from the practice, he finds more than a grain of wheat in the bushel of chaff. The innervation of organs can be profoundly modified by mental impressions : "in this respect hypnotism or mind influence is one of the most powerful agents in curing functional diseases."

The chapters upon the various functional diseases of the nervous system associated with disorders of the sexual system—hysteria, neurasthenia, and the invalid habit—are interesting and practical, and their length is fully justified by the frequency of occurrence and the importance of these diseases. Heredity is, of course, the great ætiological factor ; after this comes the faulty education of early life ; then the author justly attributes to worry rather than work the great determining influence. Next come the emotions, and last, but not least, the morbid habit of "introspection." This he believes is found most frequently and continues most persistently in those who have made a study of the functions of the various organs. He is not therefore in favor of the teaching of physiology in schools, and places himself boldly upon record against it : "Never should the child or girl be allowed to make her own body the subject of study. There are things that some people should not know." The young practitioner will do well to heed what is said as to direct examination of the sexual organs and local treatment in these cases : "I know of nothing more prejudicial than local examinations for supposed pelvic affections in hysterical girls. . . . Tampering with the pelvic organs when there is nothing the matter with them increases hysteria tenfold, as we might rationally suppose." In the treatment of these "nervous cases" the author is clear, practical and judicious. He does not always favor the "rest cure" and "forced feeding" ; indeed, he has often seen them injurious. To get the patient out of herself is the great problem ; occupation of mind and body the means ; and this, after all, is but an amplification of Abernethy's famous prescription

for the ailing rich and idle: "Live on sixpence a day and earn it!" In the treatment of these cases the key-note was struck early in the book. That note is that drugs occupy the lowest place among remedies: "All symptoms of nervous disturbance should be met by a suitable occupation and, if necessary, by drugs" (p. 44). "No rest cure, no seaside, gymnastics, cold or warm water—in fact, no particular method, and least of all, drugs—will bring about restoration to health" (p. 313).

The author has enjoyed unusual opportunities for the study of insanity in women, and his experience and suggestions are embodied in a chapter which is one of the most valuable in the book. There is also a chapter upon Diseases of the Mammary Glands, a subject not generally treated in works on gynæcology. Seven chapters upon Functional and Organic Diseases of the Bladder and Urethra closes this portion of the work. The author has been too long and too well known to the profession as a writer upon diseases of these organs to need any commendation here.

Part III is devoted to the declining period of life, the period of degenerations of tissue, to which succeed atrophy of organs and entire disappearance of those functions which once marked the being as a woman. It is a period of anxiety and dread for patients, and one often requiring careful supervision by the physician. The aberrations of the menopause and the diseases to which old age is liable are here well presented. We would have been glad to see more emphatic expressions as to the imperative duty of examination whenever metrorrhagia or menorrhagia occurs during this period. The statement that in these cases "there is usually some local cause that can easily be discovered" is plain enough and covers the ground, but every consultant knows that with shameful frequency organic disease is still too often allowed, either from ignorance or indolence, to pass unrecognized because attributed to the "change of life." It seems as if no amount of iteration and reiteration would awaken the general profession upon this point. We are impelled, by an experience which is perhaps limited, to take exception to the statement that "perverted abnormal sexual excitation in aged women is mostly a derangement of the mental functions." Some local irritative disease of the genital tract, we would place at the head of the ætiological list; this would imply a careful examination for such a lesion before accepting the statement of the text.

But it would take many more and far graver points than these to counterbalance the excellence of the chapter upon senile endometritis.

An offensive discharge in old age is not nearly so frequent a symptom as hæmorrhage, but when it does occur it is important to know that it does not always indicate malignant disease. Having worked this out, as the author says he has done, by personal observation, seeking in vain for aid from books, we are prepared to estimate very highly the value of this chapter. It is one of the best in the book.

In presenting this work on medical gynæcology the author has made an attempt to occupy a new field. We say this because Wright's work on *Uterine Disorders* was never much known in this country, Tilt's works have long been out of print, and the excellent treatise of Davenport is too brief. In critically examining the manner of performance of his self-imposed task the difficulty of keeping strictly to the lines laid down is evident ; here and there he lapses over into surgery. Nor can we avoid expressing the wish that he had done so more frequently. The adjustment of pessaries must still remain a resource for the practitioner although pessaries have sadly fallen from their high estate, and we do not see why the treatment of urethral caruncle should not be given as well as the operative procedures detailed on pages 409 and 501. The book would undoubtedly have been more serviceable to the general practitioner had more been given of that handicraft which does not rise to the dignity of surgery. We also would have welcomed a short chapter upon extra-uterine pregnancy. The question whether there is any other treatment for this condition than operation need not be opened. The attention of the general practitioner should be kept awake as to the possibility of occurrence and as to the symptomatology of this recent and brilliant advance in gynæcology.

We believe Dr. Skene's book will meet with success, because of two prominent characteristics—a marked stamp of personality and a sound foundation on clinical experience. The practitioner into whose hands it falls, if he be merely a dispenser of drugs, will be sorely disappointed ; but if he be a true physician he will find wise counsel and valuable assistance ; if, in addition, he be a thoughtful man, watching the drama of life in which he takes part with a philosophic eye, he will find much to awaken and direct his reflections.

J. C. R.

OBSTETRIC SURGERY. By EGBERT H. GRANDIN, M. D., Obstetrical Surgeon to the New York Maternity Hospital, Gynæcologist to the French Hospital, etc., and GEORGE W. JARMAN, M. D., Obstetrical Surgeon to the New York Maternity Hospital, Gynæcologist to the Cancer Hospital, etc. Pp. 207. The F. A. Davis Co., Philadelphia, 1894.

The authors have given us a volume which is the embodiment of the most advanced thought on obstetrical surgery and deals in procedures of to-day. If its "keynote is election" its foundation is asepsis and antisepsis. By strict adherence to the principles advocated it is rightly claimed that the same brilliant results that are daily achieved in general surgery may be obtained in obstetrics. The difference between the midwifery of the present time and that of the past is nowhere more clearly shown than in the results attained in these operative procedures: in the one determined upon through deliberate election; the other forced upon the surgeon when the mother and child are in a condition of extreme exhaustion. Is it remarkable that the mortality in the elective operation is nearly *nil* and that in those performed as a last resort it is nearly universal?

The greatly diminished death rate is made possible by a strict and conscientious observance of the principles of asepsis and antisepsis. In the attainment of surgical cleanliness the authors have wisely refrained from giving the reader a long list of drugs and permit him to take his choice. They have mentioned but two or three and have laid great stress upon the thorough application of soap and water and the diligent use of the nail and scrubbing brush.

We think the rather dogmatic style of the authors commendable, for writing is more impressive when imbued with the personality of the author. In this volume no flights of rhetoric are attempted, but a clear and concise description of the procedures is given and so much care is devoted to the details of technique, that the result is a working guide for those who have not had special training in midwifery.

The introduction is a short yet thorough exposition of the most recent views on obstetric asepsis and antisepsis. It shows that by care in the details of the technique of an operation every one may be surgically clean and, should sepsis occur, that some one is to blame.

Chapter I is devoted to obstetrical dystocia and its determination. It emphasizes the necessity of studying the size and configuration of the pelvis before labor and the importance of obtaining an approxi-

mate idea of the size of the fœtus which is to pass through the parturient canal. This can only be accomplished by accurate pelvimetry and careful palpation of the fœtus. "Without the data obtainable through pelvimetry and exploration of the pelvis it is impossible to elect the obstetrical operation, when one is demanded which best sub-serves in a given case the interests of the two beings whose safety depends on the acquired knowledge and expertness of the accoucheur. In practical obstetrics the forceps, for example, is too often used in instances where accurate pelvimetry will teach that it is contra-indicated."

Chapter II treats of artificial abortion and the induction of premature labor. The care of the immature infant is duly considered.

Chapter III is of particular value and interest to the general practitioner, as it is devoted to the indications, mechanism and technical methods of forceps delivery. It is clear and concise and abounds in well-executed illustrations. A distinction is made between "low," "medium" and "high" forceps.

Chapter IV considers the operation of version at length and careful directions for its performance are given. That it is absolutely necessary that an exact diagnosis should be made before attempting the operation, all will agree. The authors insist that the operator must have a true mental picture of the position of the fœtus *in utero*. This is usually obtained by careful abdominal palpation and vaginal examination. If satisfactory knowledge is not thus obtained, then it is recommended to put the patient under chloroform and introduce the hand into the vagina and two fingers into the uterus. If these rules were adhered to, perforation of the after-coming head would be rarer and the operation of version would be more frequently performed than at present.

Chapter V on symphysiotomy is interesting in the extreme. The widespread interest in this operation shows the growing tendency toward the preservation of infant life as opposed to embryotomy. The authors predict a more extended field for the application of this procedure.

In the chapter on Cæsarean section the consideration is given the importance the subject demands. This operation more than any other, if that be possible, depends for its success upon election and asepsis. The authors urge its performance before labor has begun. With the proper performance of Cæsarean section and symphysiotomy it is to be hoped that embryotomy on the living child will become a thing of the past.

The chapter upon the surgery of the puerperium is devoted to the repair of the traumatism of the parturient canal, including laceration of the cervix, laceration of the pelvic floor, fistulæ and rupture of the uterus; and the affections depending on septic infection which may demand surgical interference. These are endometritis and metritis, pelvic abscess, peritonitis and mastitis.

It is not infrequently found necessary after labor or operative procedures to repair the cervix in order to check hæmorrhage. The immediate repair of the lacerated cervix does not commend itself to all, for we believe the lacerations to be physiological and claim that if the puerperium be aseptic, as it should be, the lacerations will take care of themselves and no evil results follow. Some of the methods employed in the operations described in this chapter we should not prefer, especially that mentioned for curetting. This chapter is very intelligently and well written.

The concluding chapter of the book, on ectopic gestation, is a concise exposition of the subject and is in keeping with all that has gone before. The publishers deserve commendation for the attractiveness of the volume. The type is large and plain. The cuts and photo-plates are excellent.—G. H. M.

SYLLABUS OF GYNÆCOLOGY. By J. W. LONG, M. D., Richmond, Va., Professor of Gynæcology and Pædiatrics, Medical College of Virginia; Gynæcologist to the Hospital of the Medical College of Virginia; Consulting Gynæcologist to Richmond City Dispensary, etc. Pp. 133. W. B. Saunders, Philadelphia, 1895.

This book has been written with a threefold object—first as an aid to the lecturer or quiz master; secondly, to assist the student in following the lectures and retaining their salient points; and, thirdly, as a convenient reference for practitioners. The work is based upon the *American Text-book of Gynæcology* and of course is of more value in connection with that work than alone. It is of convenient size and can be carried in the pocket. It has strong flexible covers (notebook style) with blank pages interleaved for additional notes. The study of the subject-matter is also facilitated by the addition of notes at the bottom of each page referring to the corresponding pages in the larger work upon which it is based. Altogether it seems to fulfill the purposes for which it was written.—G. H. M.

ANTISEPSIS AND ANTISEPTICS. By CHARLES MILTON BUCHANAN, M. D., Professor of Chemistry, Toxicology and Metallurgy, National University, Washington, D. C. With an Introduction by Prof. AUGUSTUS C. BERNAYS. Pp. 368. The Terhune Co., Newark, N. J., 1895.

In the introduction, by Prof. Bernays, to this modest and neatly-appearing little volume, he says that "every surgeon must practice his art with all the safeguards afforded by antiseptis and aseptis" and that "an apology for a practical manual of antiseptic technique at the present time is unnecessary." In this he is right and any effort to bring these "safeguards" more clearly and forcibly before the vast numbers of men, who through incredulity, lack of experience or training, do not give this subject the amount of consideration its importance demands, not only needs no apology but will always be welcomed by the profession.

The history of antiseptis and antiseptics from before the Christian era to the present time, occupying four chapters, is very interesting but is given somewhat more in detail than is necessary. The same objection applies to the chapter on Antiseptics and their Relative Values, over two hundred of them being mentioned and occupying nearly one half of the entire book. We are rapidly passing, in fact have already passed, in the medical centers at least, from an antiseptis secured by drugs into an aseptis or condition of surgical cleanliness made possible by moist heat, soap and scrubbing brush. The force of this is made apparent by the summary on the last page, showing that only fifteen out of the entire number of antiseptic drugs are used by the different operators mentioned.

A book of this character, *A Manual of Antiseptic Technique*, is presumably written rather as a guide to the *novice* in the surgical art than as being of any assistance to the practical surgeon and, it seems to us, a clearly defined antiseptic technique, practical and minute to the *smallest* details, would be of more practical value than the choice of a number of incomplete ones, no two of which agree in all details.

The brilliant results of the antiseptic method so freely quoted were only obtained by rigid adherence to fixed principles and careful attention to minute details, the vital importance of which is certainly not strengthened by such a diversity of opinions and methods as: "I have no special antiseptic formulæ," "I have little faith in antiseptics except for prophylactic purposes," "Antiseptics diluted with good common sense," etc. The complete index both of subject-matter treated and authors quoted is of material assistance. E. P. M.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

March 7, 1895.

WILLIAM H. PARISH, M. D., *President*, in the Chair.

Dr. THEOPHILUS PARVIN read a paper entitled

A Contribution to Demography. (See page 393.)

DISCUSSION.

Dr. M. PRICE: I rise to thank Dr. Parvin for his interesting paper and for his study of vital statistics, his conclusions pointing in the direction which must eventually benefit us all. He referred to the question of the use of antiseptics in obstetric cases. Now, while I am forced to use, in some cases, chemical antiseptics, I am convinced that the indiscriminate use of them has done much harm. Antiseptics should be used previous to birth in suspicious cases, where there is a suspicion that the mother is diseased, for the sake of the child to prevent blindness. By the use of antiseptics in the birth canal, I think that blindness can be wiped out. But I have seen many cases where there have been bad results from the meddlesome washing with strong antiseptic solutions. I have seen a number of cases of mercurial poisoning resulting. While I do not believe that a single bi-chloride injection, of one to two thousand, will do any harm, I am convinced that repetition will do great harm. If the uterus is not cleaned out thoroughly with one washing, any further persistence in that direction is at the peril of the mother. I think that where a man finds it necessary to give repeated injections, it is because the work is imperfectly done. It is bad obstetrics. I believe that where there is a bad odor and evidence of putrefaction, it is our duty to thoroughly clean the uterus, and if we thoroughly clean the part, we can keep it clean by hot water. By repeating the antiseptic injections we only do harm. This is based upon seventy-five or eighty cases of septic poisoning, occurring in the last twenty-five years. The antiseptic craze has gone too far and this explains the slight advantage observed by the reader of the paper.

Dr. W. S. STEWART: Our thanks are due to Dr. Parvin for preparing a paper of this kind and for the trouble of getting up these statistics. It is very difficult to discuss a paper of this kind be-

cause it is principally made up of statistics, but the remarks made by Dr. Price, I can fully substantiate, as to the use of douches before labor. I believe that patients should be thoroughly cleansed before labor; but, after labor, where there is no offensive discharge and no indication of sepsis, the less we interfere with the douche the better. I have known of a case where the douche was left to the nurse and apparently the solution passed through the Fallopian tubes for immediately after the injection the patient complained of pain in the ovarian region and I attribute her sufferings and slow getting up to the effects of the douche. I think, with the last speaker, that too much meddling is bad. The only reason why there is less eclampsia is because it is generally known that chloral is one of the best remedies to arrest the convulsions and prevent the series of results that occur where formerly it was not used. I think that this would account for the less number of cases reported of late years; I think, also, that obstetricians are more apprehensive in primiparæ of convulsions, and are careful in examining the urine and in treating the patient beforehand so as to prevent the effects of albuminuria and the danger of uræmia from the retention of excretory material in the system.

Dr. A. B. HIRSH: This paper covers so general a subject, that it is almost impossible to discuss it in the limited time usually assigned to one paper. It seems as if we should devote an entire evening to the discussion when Dr. Parvin presents such a statistical paper and the paper he has read is worthy of this courtesy. I offer it as a suggestion that this subject be taken up again and the whole evening given to its consideration.

A communication on

The Accouchement Forcé

was read by Dr. GEORGE M. BOYD. (See page 399.)

The discussion was opened, by invitation, by Philander A. Harris, M. D., of Paterson, N. J.

DISCUSSION.

Dr. P. A. HARRIS: With regard to the three cases which Dr. Boyd has reported, it is clear that they were desperate cases, cases which we all recognize as those in which we must act and act quickly. As far as eclampsia is concerned, I believe that we all appreciate the fact, where the patient has been comatose for a while, that it is clearly our duty, at least most of us are inclined to acknowledge that

*Table of Ten Cases of purely Elective Delivery, by P. A. Harris, M. D. ;
nor appreciable Dilatation of the*

No. of case.	Operated for	In presence of	What labor.	Anæsthetic during dilatation.
1	Placenta prævia.	Dr. Amiraux.	First.	Ether.
2	Placenta prævia.	Dr. J. W. Smith.	Fourth.	Ether.
3	Placenta prævia.	Drs. Smith and Millsbaugh.	Fifth.	Ether.
4	Placenta prævia.	Dr. Doty.	Fourth.	Ether.
5	Placenta prævia.	Dr. B. C. Maginnis.	Third.	Ether
6	Placenta prævia.	Dr. C. Van Riper.	Multipara.	Ether.
7	Eclampsia and comatose, 10 hours before operation.	Dr. West.	Multipara.	Chloroform.
8	Eclampsia and comatose, 5 hours before operation.	Dr. Williams.	First.	Chloroform.
9	Eclampsia and comatose, 16 hours before operation.	Dr. Merrill.	First.	Chloroform.
10	Eclampsia and comatose, 6 hours before operation.	Dr. B. F. Rogers.	Fifth.	Chloroform.

*embracing Every Case delivered by him, in which neither Labor Pains
Os Uteri preceded Operation.*

Time required to dilate cervix from index finger to expanded fist, in minutes.	Time required for completion of second and third stages, in minutes.	Total in minutes.	Mother.	Child.	Month of utero-gestation.
21	28	49	Living.	Dead.	8th
20	25	45	Living.	Dead.	7th
16	24	40	Living.	Dead.	7' $\frac{1}{2}$
22	22	44	Living.	Living.	8' $\frac{1}{2}$
22	23	55	Living.	Dead.	8th
16	19	34	Living.	Living.	8' $\frac{1}{2}$
22	27	49	Living.	Living.	8' $\frac{1}{2}$
55	20	75	Living.	Dead.	7th
18	37	55	Dead.	Dead.	7' $\frac{1}{2}$
18	27	45	Living.	Living.	7th

it is clearly our duty to induce labor. I believe that we are all imbued with the impression that the chances for that mother are better if she is delivered quickly; the sooner she is delivered the better for her interest and I believe also for the interest of the child. The statement is made by some authorities that of all women who have convulsions and are comatose forty per cent. die, if undelivered, and that a very much smaller percentage is lost where efficient methods are adopted to produce delivery.

As regards placenta prævia, I think we are coming to a point where we are convinced that the condition—quite as much as eclampsia—is one in which it is desirable to get the uterus emptied. Two weeks ago this afternoon, a friend of mine of Passaic, N. J., sent for me to see a case of placenta prævia. When I got there I found violent hæmorrhages had occurred but as she was not bleeding at that time and I had an important engagement, I made an appointment to go the next morning. On my return I had the woman thoroughly cleansed, the vagina and rectum were washed out and in short all the technique of antisepsis was observed, and then attempted dilatation of the os and delivery of the woman. The result was very satisfactory; the time was much shorter than usual and the mother did well; mother and child are both living.

It forms Case VI. of the collection of cases which I hurriedly prepared to present to-night. This table comprises my entire experience with placenta prævia and eclampsia, in which there were labor pains, or appreciable dilatation of the os uteri before I attempted to deliver. Of these I lost but one. There were also a few cases of placenta prævia and also a few in which convulsions had occurred, which were not included in the number reported to-night, because there was partial dilatation of the os.

By the addition of the number of minutes required for complete dilatation of the os to the size of the closed fist, we find that it was 230 minutes or an average for the 10 cases of 23 minutes. The average remaining time required for completion of the labor in all cases was 26 minutes for the second and third stages. Now, if we except from this report "No. 8" in which I could not introduce my hand and delay was thereby experienced, the time limit for dilatation is reduced to 19.4 minutes.

Dr. Boyd has well understood and emphasizes the importance of strict surgical antiseptic technique in these cases, and it is a matter which, I think, we must all seriously consider when we elect to do so important an operation as the one under consideration. It is true

that placenta prævia is a dangerous condition to both mother and child and it is true that eclampsia is a still more dangerous condition; but that is no reason why we should add one fraction of danger to that condition by dirty workmanship. I confess that where it has been possible, I have removed patients from their houses to the hospital. And though I have been put on record as discouraging the operation of symphysiotomy in houses where conditions are unfavorable, in the conditions under discussion this evening, I think it is better to operate in a kitchen with bare floor and table covered with oilcloth than to delay because we have not a better place to operate. The most strict aseptic surgical technique, however, is desirable and I should discourage any one from attempting these operations unless he tries to make them aseptic; but if time will not admit of doing all we desire, we should at least attempt to make the operation as safe as possible, with the means at our command.

Dr. M. PRICE: In looking at the table, I am much surprised at Dr. Harris's child-mortality. He certainly has great success with the mothers, only one death out of ten; but six children out of ten, this seems a large mortality. I admit that all the cases of placenta prævia that I have attended have been almost at term and the problem of saving both mother and child was less difficult and the chances better than earlier. I have always had better results in placenta prævia where there was free hæmorrhage, by forcible delivery, than in those with eclampsia. In cases of placenta prævia, the forcible dilatation of the uterus can be accomplished without ether easier than the same can be done in cases of eclampsia with ether. Ether should be used in both cases, however.

I recently saw a case of placenta prævia seen with Dr. Hollingshead of New Jersey. He had spent two nights and a day with the patient; but she had had very little hæmorrhage and about two weeks before she had had a little show. The doctor met me at Pemberton station and we had to go about five miles back in the country. When he left the house she was perfectly comfortable and when we reached there she was perfectly comfortable. She had had several pains and with each pain there was a gush of blood. Between the time he had examined her and I had my hands washed, the vagina filled with blood. I immediately went through the middle of the placenta and delivered a living child and the child is still living. The child was full and the dilatation easy. The blood flowed freely; she lost two quarts in bed by actual measure after the delivery. Both mother and child are living.

I remember two cases occurring in the practice of a midwife. In the first case, I called in Dr. Gloninger to help me, it was in a very poor neighborhood. I examined and found a central implantation and delivered a living child and she is still living. There were two or three cases in this midwife's practice besides this and the children are all living. I must say that I do not dread placenta prævia, if the mother is still living and has not lost too much blood before I see her. I believe that it is our duty to stand by the woman who has placenta prævia, or else turn over the case to a competent man. The case in Pemberton, N. J., would have been dead in an hour if we had delayed, or if we had resorted to a tampon we would have lost her. My belief is that we should stand by and not leave the woman in that condition until delivered; but still the child may not live owing to its weak condition from previous hæmorrhages.

Now as regards the eclamptic condition. Here there are more cases of death because we have to use more violence; therefore the results are bad. There is one case in which I am in doubt as to the best course to pursue. If we find a woman in the fifth or early months in this distressing condition, I do not think that it is our duty to bring on labor. It can not be proved that the pregnancy is the only cause of the convulsions. Here we should rely upon chloral and other drugs and not introduce an additional element of danger into the woman's condition. I have never seen any good result from bringing on labor if the woman is not in labor. We should satisfy ourselves that the affection of the kidneys is secondary and the result of the pregnancy, before we proceed to empty the uterus. After labor has begun, no one doubts the propriety of emptying the uterus.

Dr. LONGAKER: My knowledge of this plan is not very extensive, but by comparison with a long list of cases I have come to the conclusion that the method of *accouchement forcé* recommended by Dr. Boyd affords results which are not any better than those given ten years ago by Hofmeier and Lomer. The method was not original with them. It seems to me that if the child's life is not already lost by the hæmorrhage at the time of version, certainly the added risk of waiting is not great. The statistics show from sixty to seventy per cent. of cases of children lost; but the results are still as good as those reported by Dr. Harris. There is one point which gives me courage to hasten the delivery and that is that there has not been any maternal mortality in these cases. I have had knowledge of one or two cases, in which the mother promptly died after extraction of a six-months fœtus. These results were not of such nature as to en-

courage me to hasten delivery. We all know very well that after version is complete and the leg is brought down, that hæmorrhage will cease, and this can be done by the introduction of two fingers. There is very little additional risk to the child in waiting, probably there is a little.

With regard to the occurrence of convulsions in pregnancy, I believe with the last speaker that, where there is no labor, the results will be just as good where the convulsions of the mother are treated and labor is not induced. I have seen more than one case treated successfully and the labor going on to the normal term and delivery in from four to six weeks after the convulsions and without any return of the convulsions.

Dr. NOBLE: I believe that we are all inclined to be prejudiced against *accouchement forcé* by our early teaching, but we must remember that what was dangerous in pre-antiseptic days is not necessarily dangerous now. Moreover, *accouchement forcé* as described by Dr. Boyd, is very different from that which was taught twenty years ago. It consists now of rapid artificial dilatation of the cervix, followed by delivery. In the old days the cervix was not dilated, or but slightly so, and the child was delivered by strong, if not violent traction, through the undilated cervix. I would emphasize then that *accouchement forcé* as practiced now has two elements of safety over the practice of a generation ago:

1. The use of asepsis.
2. The preliminary dilatation of the cervix.

The maintenance of asepsis prevents the septic and inflammatory complications which so frequently followed *accouchement forcé* in the old days, and the preliminary dilatation of the cervix prevents, or largely minimizes the dangers of extensive lacerations of the cervix, or even rupture of the uterus, which were not uncommon in years gone by. The question now is, whether or not we can improve our statistics by the employment of *accouchement forcé*. With regard to foetal mortality, I was very glad Dr. Longaker referred to the statistics given by Lomer, and I might refer also to those of Murphy. The papers of these two authors should be studied by all who have to treat placenta prævia. They are classical, and embrace the sum of our knowledge of the subject up to the time of their appearance. Sixty per cent. foetal mortality is the average. Murphy had somewhat better results. Probably his better results were due to his special methods of treatment, and especially to the fact, that in cases of marginal and lateral placenta prævia, in many cases after securing dilata-

tion of the cervix, he uses the forceps, or permits the head to come down by the natural forces, instead of following the rule of Braxton Hicks—to turn in all cases.

About the time I read Murphy's paper, I had a case of partial placenta prævia, in which the cervix dilated with very little hæmorrhage. As the woman did not bleed, I permitted the head to come down by the natural forces, and a living child was delivered. The paper and the case made an impression upon me, and since that time, when the condition of the patient warranted it, and hæmorrhage has not been free, I have permitted the baby to be delivered head first. Under these circumstances I think this plan is better, in that it does not add to the mother's danger, and greatly increases the chances of the baby being born alive.

With regard to the induction of labor for puerperal convulsions prior to the eighth month, I believe that one should be guided by circumstances. I should undoubtedly induce labor for progressive nephritis, as a preventive of convulsions, if direct treatment did not lessen the kidney complication, and have done so a number of times with a happy issue. I have induced labor also by *accouchement forcé*, in a number of patients who were comatose at the time I saw them, having had numerous convulsions over a period of one or more days. At least, three of these women have died shortly after delivery, so that it seems to me questionable whether it is desirable, in cases deeply comatose when they come under observation, to induce labor. I am inclined to believe that in these cases the shock of the delivery is sufficient to determine a fatal issue. I believe that we will do more good by devoting our attention to purging and sweating the patient, and using the recognized sedative remedies, especially chloral, chloroform, and bleeding, rather than to bring on labor in these cases.

Dr. R. C. NORRIS: The discussion has wandered somewhat from the main point. The question, I take it, is, shall we, in the presence of eclampsia or placenta prævia, disregard the integrity of the cervix and lower uterine segment, to obtain immediate extraction of the child. It is not necessary to have immediate delivery in all cases; nor is the child always to be saved by a method such as Dr. Harris', which is claimed to reduce the duration of labor to two minutes. In eclampsia the child often dies because it has been nourished by a pabulum incapable of sustaining life, and if it lives it is likely to be feeble for the same reason. I believe that the man who delivers an eclamptic mother too speedily will predispose his patient to repeated con-

vulsions during the labor. If speed is the object, why not resort to Cæsarean section as some of our German friends do. Take Dr. Harris' statistics—half the children died—which is not a reduced foetal mortality. The incisions and other violent treatment are not advantageous. It has been my practice to wait until the os is sufficiently dilated to deliver with the forceps, especially aiming to do so without injury to the soft parts. This has been my practice at the Preston Retreat, where I have had seven grave cases of albuminuria and three eclampsics in one year. All my eclampsia cases were saved and too speedy delivery was not employed. If a doctor takes the advice of Dr. Price with reference to albuminuria in pregnancy, I think that in a hundred cases the women would be in more danger than if promptly delivered, for the toxic material will keep on accumulating in the blood and disaster is ever close at hand. I would not, from my own experience, sanction this advice of delay.

As to the method employed for dilatation of the cervix, as I have said, I do not think that in eclampsia the saving of a few minutes is a matter of great importance. In some cases of placenta prævia, however, these few minutes may be of vital importance. Last year at the meeting of the American Gynæcological Society, I met Dr. Harris, and he made me acquainted with his method of operating. I had shortly afterward an opportunity to adopt this plan in a case of marginal implantation of the placenta. The whole hand could be introduced into the vagina, which is necessary, and I found Dr. Harris' method better and far less tiresome than the plan of introducing one finger after another. Here dilatation is more readily and less dangerously practiced than in eclampsia. In cases where the head is to be brought down with forceps so as to act as a tampon or when version is indicated Dr. Harris' method is very useful; but in eclampsia it is not so advantageous since it is not so necessary to quickly extract the child and above all to expose it and the mother to the dangers of version. In a case of placenta prævia last year, I had the pleasure of pursuing this method of dilatation and of saving both mother and child. I was glad to hear the remark of Dr. Noble about the forceps in placenta prævia and agree with him. When there is central implantation, version is the operation; but when there is a marginal or lateral implantation, it is usually better to bring down the head with forceps. Where there is this choice between forceps and version, the former is to be preferred since it offers sufficient safety for the mother and greater safety for the child. In placenta prævia the foetal mortality is sixty-six per cent. in Dr. Harris' report, whereas it usually is

held to be fifty per cent.; it would appear, therefore, that he did not gain much by version and rapid delivery.

Dr. HOFFMAN: In this discussion it is proper to bear in mind that we are considering two things entirely different in their nature, where the induction of hasty labor is concerned: Placenta prævia is an anatomical condition and eclampsia is a physiological condition. In placenta prævia we have only one exciting condition, and that is hæmorrhage. If there is no hæmorrhage, we are not very much concerned about either mother or child. I was very glad to hear Dr. Noble refer to the judicious use of the forceps. I think that if we can use the forceps, it is much safer than podalic version. I do not personally like version by the feet; in one case I ruptured the uterus by this operation. Therefore, in cases where the uterus is not dilated and is hard to dilate, there is danger of rupture by version; but by the use of the forceps there is no such danger. Even in cases of central implantation, where we can penetrate the placenta with the finger and let the head come down, and apply the forceps, it is much safer than to introduce the hand into the uterus in order to produce podalic version.

Now as far as eclampsia is concerned, we have an entirely different condition to deal with. Here the convulsions are physiological. Now, as long as it is a matter of dispute as to what causes the convulsions, just so long it must be a matter of dispute as to what is the best treatment. We have a number of views as to the best treatment varying from morphine and pilocarpine to surgical procedures; in fact entirely different methods find supporters. I am entirely in accord with Dr. Price when he says that in many cases, to hasten labor is to hasten death. I have seen one or two cases in which I have hastened death by hastening labor. I have hastened death by the mechanical violence, which Dr. Harris has just advocated and I believe that the amount of violence used in dilating the uterus is a very important factor in producing the death of the mother, and in these cases, the child is likely to die anyhow. In eclampsia, it is wise to prevent further difficulties by the induction of labor; but in many cases it requires a very great degree of force to introduce one finger after another, as Dr. Norris has spoken about, until we introduce the whole hand; but if we introduce only two fingers, we will have room to insert the narrow blades of the Taylor forceps and bring the head down into the pelvis, we can save the mother and there is less risk to the child.

In puerperal eclampsia it is no uncommon result to lose the child

from the effect upon it of the convulsions in the mother. We are often unable to hear the foetal heart beat, before attempting to do anything. It is not the labor that kills the child but it is convulsions which kill it. Therefore, we should eliminate from this discussion anything which would ascribe the death of the child to the efforts of the surgeon to relieve the convulsions.

There is another point I would speak of. We have convulsions due to disease of the kidneys and convulsions due to mechanical causes from pressure of the child ; these two conditions are very different. Hence arises the difficulty of grouping these cases and of saying that we can save this case by one means and that case by another means. The difficulty is due to the fact that there are different kinds of eclampsia and in treatment we must differentiate between them.

Dr. R. WILSON : The induction of labor and *accouchement forcé* as means of artificial delivery will always be opposed to each other. In eclampsia the second stage of labor is apt to be a rapid stage and this fact shows that the uterine forces are acting in a more natural way after the cervix has been normally dilated. Therefore violent efforts at rapid delivery are unnecessary. Hæmorrhage and, as a result, septic infection is more apt to occur in *accouchement forcé*, therefore, than if dilatation is more slowly performed and labor brought on more gradually. There are many cases in which labor has been brought on to the end of the first stage, where the labor has been successfully concluded by natural means. I think that it is proper to consider this in the discussion of the comparative value of *accouchement forcé* and delivery by more natural means. I believe that the chances of the child are better and the maternal mortality less, from slow delivery following induced labor than by *accouchement forcé*.

Dr. BOYD : In the two cases of eclampsia which I reported this evening, the patients were in a desperate condition and there was no evidence of labor having developed. Would it have been wise in those cases to have waited for labor to develop, with the possibility of the patient dying undelivered ? If it is wise to empty the uterus in eclampsia, then I think that the method I have mentioned and which has been described by Dr. Harris, is the most satisfactory one to adopt. In the two cases, I reported, labor was brought on in this way. The patients were not in labor ; Dr. Harris' method was practiced and they did not die. My object, however, in reporting these cases was to bring up for discussion the various methods of emptying the uterus rather than the merits of *accouchement forcé*.

Dr. J. M. BALDY read a paper entitled

Hysterectomy for Puerperal Septicæmia; Specimens. (See page 431.)

DISCUSSION.

Dr. LONGAKER : What would have been the chances of success in the first case if treated by curettement ?

Dr. SHOEMAKER : It seems to me that Dr. Baldy uses terms rather loosely. For instance, the first case was not one of puerperal septicæmia but of pyæmia with pus-tubes. The removal of the tubes and the use of the curette would have done as much to save the life of the patient as a hysterectomy. The second case was one of septicæmia. Now the experience of surgeons is that when toxins have been once fairly absorbed into the blood we get the best results by securing free drainage and then treating the general condition.

The result in these two cases bears out what we already know, that the removal of the focus of poisoning after the poison has spread to the whole system, does not cure the patient. It is remarkable what good results have been obtained by cleaning out the uterus and fighting the case by medical means, of course removing tubes if they fill with pus. If a case occurs in the slums, it is true, we can not always secure good treatment.

In the second case it occurred to me that since croupous pneumonia is especially likely to occur in septicæmia following operations, he can hardly point to the lung in confirmation of the statement that the patient was entirely free from any septic condition. The danger of pneumonia is as much a definite operation risk as is hæmorrhage or shock.

Dr. NOBLE : There have been several cases of hysterectomy for puerperal sepsis, three of which have recovered. One was operated upon by Dr. Kelly, in Maryland. It was done about a week after confinement, and the patient made a good recovery. She would have died had this operation not been done. Another case was that of Laphorn Smith, in a woman with sharp sepsis, who continued to grow worse in spite of the use of curettage and douching; peritonitis was developing. The patient recovered after hysterectomy. The third was a German case, where the uterus had been curetted a number of times, but continued to discharge foul detritus. Hysterectomy was done, and the woman recovered. There have been a number of fatal cases besides those of Dr. Baldy. One by Dr. Montgomery died of

septicæmia. My own view is that the field of puerperal hysterectomy is small. It is seldom indicated later than the first week after labor, and its best field is within the first few days of the attack. If early after labor we find sepsis appearing, and treatment by douching, curettage and the use of proper systemic remedies, fails to prevent the spread of sepsis, the patient going from bad to worse, especially if symptoms of peritonitis appear, it is time to operate; and if done at this time, before the peritonitis becomes general, and before general septicæmia is marked, I believe that a number of these cases will be saved, that otherwise would die. If the septic condition has become very marked, and there is spreading peritonitis, the patient will die. So far as I know, there is not a single case on record of general puerperal peritonitis, which has recovered after operation. In these cases operation only adds an additional shock, and the woman dies a little earlier than she would without operation.

At a later period in the puerperium, when operation is done for localized abscess or pus-tubes, no doubt hysterectomy will be useful in a certain number of cases as a variation in the technique of operation; but this is a different class of cases from that already considered.

I am glad to see that Dr. Baldy's experience has broadened. He has at last met with puerperal cellulitis, and I am quite sure as time goes on other cases will be added to this one in his hands.

Dr. HOFFMAN: I always like to hear Dr. Baldy talk as he talks from conviction. However, I too have seen cases and I do not believe in pus-tubes apart from infection; that is to say, there is never a case of pus in the uterus apart from tubal or ovarian disease, unless there is a dirty operator behind it. In other words a retained placenta does not of itself cause pus in the uterine walls. If it does I should like to know it. I have known cases in which the placenta remained for a year and I have known it to remain until a second pregnancy occurred, causing it to abort at the sixth month. The old placenta was thrown off with the miscarriage.

As far as operations, for the removal of the uterus are concerned, for puerperal fever and septicæmia, I am perfectly free to acknowledge that there may be a field for it. There is nothing absolute in this world and I am perfectly willing to leave it as Dr. Baldy has said, in the hands of an expert.

It should be remembered that there are cases which get well after operation, which would have got well without the operation and do not get well on account of the operation. For instance, if I discover

pus in the broad ligaments, there is no reason for believing that the patient will die. Dr. Noble believes in cellulitis even more firmly than I do; but to say that there is lymph in the broad ligaments, found at the operation, it is not necessary to conclude that it was necessary to remove it in order to save the patient's life. Or if we find the uterus to be the site of pus, it is not to say that by removing the uterus we will remove all source of further infection.

I would like to speak of a case of general peritonitis, which occurred some years ago, when I was assisting Dr. Howard Kelly. The patient lived on the line of the Philadelphia, Wilmington and Baltimore Railroad. Dr. Kelly was called in consultation and he decided to operate. The pelvis and abdomen were full of pus; the abdominal cavity was so full that I baled it out with my hands and it was then flushed out with hot water. The entire abdominal cavity was full and the patient got well. If this was not a case of general peritonitis, I do not know what it was.

Dr. M. PRICE: I am convinced that there is a wide field in puerperal conditions for exercising the art of the surgeon; but I am just as fully convinced that there is nothing to be gained by removal of the uterus. I am greatly obliged to Dr. Baldy for bringing these specimens before us. The operation for the pus-tubes was a very proper operation. I have seen many cases die from delay on the part of the surgeon. There are many cases in this state, where there is a temperature of 103 or 104, where I defy any man to put his finger upon a spot of septic infection. About a year and a half ago, I saw a case with Dr. Keller; it was a married woman who was septic for five weeks after confinement and had a good recovery. I think that in such a case, any operative interference would have been attended by risk of life.

Now, I would like to answer Dr. Noble. He says that there is no case on record where puerperal peritonitis recovered. Now, I have operated upon four or five, where the abdomen was full to the diaphragm with pus. I have seen Dr. Joseph Price operate upon more than fifty cases of this kind, where he opened the abdomen and discharged the pus, washing them out afterward, and he did not lose ten per centum. The inflammation was general and these cases were not in the first week; indeed we rarely find a woman in such a septic condition at the end of the first week. I am fully in accord with Dr. Baldy, in the opinion that where such a condition is found a specialist should be called in.

Dr. BALDY: If anybody has listened to my discussions and read

my writings on the subject of cellulitis and has gained the opinion that I have no belief in puerperal cellulitis, he has heard and read to little advantage. I have always admitted it as an acute condition in the puerperal state; either killing the patient or becoming entirely cured. I have just as persistently denied its existence as a chronic condition and reiterate that denial.

Now, to reply to Dr. Shoemaker's objection. The very reason for which the operation is devised is that the patients should not go into a deeper septic condition from septic absorption from the uterus. There is a time in which the blood is not too much infected, but that the patient can be saved, and, I feel quite sure that at that time a certain number of cases can be saved by hysterectomy. I am very glad that he has raised this point; it is just the ground I would take.

The statement has been made that sepsis is always due to traumatism. It is true: Criminal abortion is traumatism; therefore, the condition exists. The site of the placenta even in ordinary labor offers a sufficient place of entrance. We all know how likely these abortion cases are to become infected.

I have said that the field for this operation is a small one; the field is small but it does exist. As the rule, these cases die; some may be saved by operation. There are a few such cases on record.

As regards the time for the operation, there is no question but that the earlier the operation the better. Out of one hundred per cent. of these cases that now die, a certain proportion might be saved by early operation. Therefore I say that the specialist should be called in early and in time to study the case. No one can say that the limit has passed in any case and the result is necessarily fatal. All of us have operated upon cases where we thought that the patient was going to die and she recovered, and on other cases which we thought they would get well but they have died. It is not fair to abandon these cases to die without an attempt at least made to save them. If there are a hundred cases and we believe they are all going to die, we are dooming them to death by leaving them alone; if only a small proportion may be saved by operation we should give them the chance.

As regards the pus in the uterine wall and not in the tubes, I can not understand the position of the gentlemen. If we have pus in the tubes and the patient is dying with sepsis, we would remove the offending organs. Then why not, when the pus is in the uterine wall? If pus can be pressed out of the surface of the section of the uterine

wall as in this case, I do not see why it should not be removed. Their position to say the least is inconsistent.

It is to be observed that the first patient would have recovered, had she not contracted pneumonia. According to the opinion of all who were present at the post-mortem examination, there was no evidence that this was a septic pneumonia. Of course, we may be mistaken, but I think that there was no evidence of sepsis at that time. It was about two weeks after delivery when the operation was done. A still earlier operation would have given better chances of recovery ; but the earlier the operation is performed the greater will occur the number of cases which would not have needed the operation and would have recovered without it.

Adjourned.

FRANK W. TALLEY,
Secretary.

TRANSACTIONS OF THE ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

Tenth Annual Meeting, held at the Academy of Medicine,
February 12 and 13, 1895.

The *President*, WILLIAM E. MOSELEY, M. D., in the Chair.

Dr. BACHE EMMET operated before the Association at the Woman's Hospital and gives the following history of the case :

Double Ovarian Abscess and Pyosalpinx.

Mrs. B. G., aged twenty-five ; married nine years. First menses at thirteen years. Last, January 26, 1895. Menstruation occurring every three weeks, flow profuse and painful, of seven days' duration ; usually has slight show between periods. Children : one, six years ago. Was in labor forty-eight hours. Instrumental delivery and remained in bed three months.

Patient applied for admission February 2, 1895, complaining of intense pelvic pains. More marked on right side. Pain over sacrum during menstruation. Profuse leucorrhœa, painful micturition and constipation.

Symptoms date back to birth of child six years ago, increasing in severity up to the present time.

Examination was very painful and showed a mass on left side,

cystic ; mass on right side hard and elastic. Patient gives history of periodical attacks of chills, temperature and sweats, though no rise of temperature has been noticed since her admission. Has had local treatment, *i. e.*, applications of iodine, blisters, tampons and douches during past two years. Patient examined by Dr. Cleveland, and diagnosis of pyosalpinx (double) confirmed.

Operation.—February 12, 1895. Patient properly prepared and etherized, a median abdominal incision of six inches was made. Pyosalpinx of both sides with ovarian abscess, bound down by extensive and firm adhesions, was found. The adhesions being liberated, the ovaries and tubes (each mass the size of an adult fist) were ligated off with catgut and removed ; pedicle cauterized with Paquelin cautery. In breaking up the adhesions on the left side a little cystic fluid and a minute quantity of pus escaped which was caught on sponges, the same thing occurring on the right side also. Considerable hæmorrhage occurred during the operation from the left ovarian artery, which was torn, and also at the site of the adhesions. The incision was closed with silkworm gut and patient left operating room at 5 P. M. in very poor condition. Duration of operation, one hour and a half. Patient failing to respond to stimulation, and indications pointing to hæmorrhage at 5.50 P. M., Dr. Bird opened up the incision and removing several large clots examined the stumps of both sides and could detect no bleeding point. He, however, secured the pedicles with extra ligatures of silk. Pelvis thoroughly sponged out and active bleeding detected low down on the left side, apparently from the adhesions and possibly from an artery of the left side which was torn during the operation. Being unable to control the bleeding with ligatures or sutures, on account of its position, the cavity was packed with gauze and the incision again partially closed. At this time no pulse at the wrist could be detected. Under active stimulation the patient's condition improved during the following twelve hours. There was, however, a gradual rise of temperature and the patient died at 4.30 P. M., February 13, 1895.

It is to be feared that hæmorrhage set in directly after the operation was completed, or as soon as reaction after the ether was established. I noticed that the patient was quite blanched, but I failed to attach the proper value to the appearance. From the time the hæmorrhage was evident the pulse could not be counted, and even though there was some slight improvement in the general condition, after the abdomen was reopened it is fair to suppose that the original shock to the centers was too great for the patient to recover from, as

the examination after death failed to show that there had been any hæmorrhage after the firm packing was placed.

In caring for this case the benefit to be derived from transfusion of a saline solution was not overlooked. One pint and a half was thrown into the cellular tissue of the left crural space and one pint on the right side, also a fair quantity into the abdominal cavity. It was also sought to inject similar fluid into the left cephalic vein, but it all proved of no value to restore the patient.

Dr. GEORGE T. HARRISON read the following paper, entitled

Parametritis (or Pelvic Cellulitis) : its Pathological Importance and Clinical Significance. (See page 402.)

DISCUSSION.

Dr. EMMET : I did not intend to have anything to say in regard to this subject, but I am very much obliged to Dr. Harrison for his paper and, I may say, for placing me in a right light ; because it is a very strange thing how much I have been misrepresented in my views. Within a few hours I have read over my article on pelvic inflammations, in the last edition of my book, and I do not see that I now have much to modify in regard to it, so far as the essential points go. I have been greatly misrepresented in this matter, and the men who have done so have not done me the justice to state the fact with it that really it was my teaching which has led to the present understanding of the subject. There was a time when I stood alone in my views as to the importance of pelvic inflammations in diseases of the genital organs of the female. I had to overcome great opposition. There is no time at which I have held any other view than that peritonitis and cellulitis exist together and that one scarcely could exist without the other if either were of long standing. There is no doubt about it that you can have a pure cellulitis, but if it extend beyond a certain time you have peritonitis also. And because it was found in post-mortems of old cases that there was no cellulitis proved nothing to the point. It only proved that where an inflammation had begun in the connective tissue, and the connective tissue became generally inflamed, the latter was destroyed and disappeared ; then the process extended to the peritonæum and adhesions, and displacements and other bad effects were found. It should be taken into consideration that it depends largely on the kind of practice a man may have as to the view he may hold of pelvic inflammation. In 1880 I saw Mr. Tait, was with him several weeks and saw a number of his operations.

I saw no less than sixty-odd tubes in a row that had been taken out, and it appeared to me that every woman in Birmingham must have "the clap." I came back perfectly prepared to change radically my method of practice. It was four years before I saw a pus-tube afterward in my practice, unless it was brought to me by somebody in consultation. That is to be borne in mind. It is not everybody, who treats diseases of women, who sees in every other case a prostitute. I see very few such cases among the class I treat, and even in the Woman's Hospital the largest number of cases I see are brought to me from a better class of people. These facts may suggest the explanation of Mr. Tait's frequency of finding it. But the absurdity of claiming that every inflammatory condition which a woman may have in the pelvis is a peritonitis and is not a cellulitis is, I say, most apparent; it is quite of the same order as the claim that every pelvic abscess originates in a pus-tube. That I know *not* to be true. I find, if anything, that the pus-tube origin is the exception.

I don't know that I have anything more to say—the doctor has gone so thoroughly over the ground—except to reiterate that I have been misrepresented, in that credit has not been given me for having maintained, for over twenty years, the importance of inflammations in the pelvis. During the whole of that time I have claimed that cellulitis and peritonitis have gone together, only I insisted that *generally*, where it existed in the puerperal state, it began as a cellulitis but, if the process continued, the perinæum became involved; the former being the original seat of the disease and the peritonitis secondary and often subsidiary, I preferred to term the condition "pelvic cellulitis." But I have always claimed the two might exist together and that it was seldom that either could be distinctly diagnosed from the other.

Dr. BAKER: I have listened to Dr. Harrison's paper with a great deal of interest. I think that the tendency of recent times has been not to give due importance to pelvic cellulitis. A certain number of gynæcologists, or of general surgeons who do a great deal of abdominal surgery and see that side of it, have been willing to grant that pelvic cellulitis does occur but is confined to the puerperal state, and that it does not occur outside of that state. I quite agree with Dr. Harrison that rarely it does occur outside of that state. The times that it does so occur are more and more infrequent. Why? Because we are learning to do cleaner and better surgery and because we do not use tents as a means of dilatation as was the custom formerly; which tents produced a softened, relaxed condition of the supra-

vaginal cervix not altogether unlike the condition of the part during the puerperal period, in which there existed the best field for the extension of septic material. It is unnecessary to recall to the minds of the gentlemen here the relations of the pelvic cellular tissue and the abundance of it which surrounds the supravaginal cervix. That, in this softened, relaxed tissue of the uterus as produced by the puerperal state or by such dilatation, we may have a condition of pelvic cellulitis, I feel sure; and I am sure that, as Dr. Emmet has said, we do see—rarely, it is true, but we do see—such cases which can not be accounted for by the common understanding of the presence of a pustule. Of course with the frequency of opening the abdomen we find a class of cases which long ago we might very readily have thought to be cases of pelvic cellulitis pure and simple, where we find the tube and ovary bound down to one side by a previously existing salpingitis or oöphoritis and accompanying pelvic peritonitis, and we realize that this was the cause of the inflammatory exudate. But we see another class of cases which I think can only be explained by the presence of pelvic cellulitis. I think that in this whole subject the pendulum has swung perhaps too far in the direction of cases being always described by what we realize they are generally—salpingitis and oöphoritis.

Dr. A. P. DUDLEY: I will preface my remarks by saying that Dr. Emmet will never live long enough to realize the fact that nobody in the medical profession will do him justice until after he is dead. We are all pupils of this one man, and I am very happy to say that all through his career as well as ours I believe a disposition to be conservative has predominated. This subject is an inexhaustible one, because it brings into conflict different minds, experiences and ideas, respecting the anatomical relations of the parts of a woman's pelvis, and different views upon the same pathological conditions. I am here to say that I have seen them all. I have samples of each of them under my care to-day. I am not only perfectly willing but am glad to be able to say, that cellulitis is the prime factor in this trouble in the major portion of the cases that I have had to study. And I will challenge any man to open the abdomen of a woman who has pyosalpinx and not find the peritoneal surface of the pyosalpinx in a comparatively healthy state. To be sure it is adherent, because Nature has had to get relief in some way, and serum has been thrown out in the pelvis. But I have seen many cases of pyosalpinx in which the peritoneal covering of the tube was healthy. In 1881-'83, in California, I operated upon a patient who had a pelvic abscess, not connected with the tube and ovary at all but in the cellular tissue of the pelvis,

because the ovary was the site of an ovarian cyst holding four quarts of fluid and the tube was attached to the front of it so that there could not possibly be a salpingitis connected with the pus sac ; the two developed together. I removed the tumor, made a funnel out of the pedicle and tube, through which I drained the pelvic abscess, and reported, it as such in *Gaillard's Medical Journal* of August, 1887. I think a year ago some gentleman in Philadelphia reported two cases of cellulitis in this way and opened the eyes of those people who have been crying that pyosalpinx was the only cause of abscess in a woman. There is no use discussing the subject *pro* and *con*, relative to the fact that cellulitis exists. It does exist and to a greater extent than is acknowledged to-day. Why? Because the peritonæum covering the uterus, the tubes and the broad ligament is not as thick as a piece of paper. Of course we have all seen it where it has thickened to a quarter of an inch, but I call to mind the abdominal sections that all of you have made and say that my statement is correct, that the true peritonæum is no thicker than paper and that, in the majority of cases of pus that you remove from the abdomen, that membrane is healthy ; it is only bound by adhesions, the result of congestion. What is the clinical importance of that? It is most profound. It does exist in women independent of the puerperal state. It exists in girls. It starts not from a puerperal injury alone but from any other form of injury. If you study Dr. Emmet's writings you will find that, way back when he was a boy, almost, he wrote an article on the subject of pelvic inflammation or congestion. My belief is this—that congestion of the pampiniform plexus in women is in seven cases out of ten the prime evil in pelvic disease. If you keep the circulation straight and right you will not have any pelvic cellulitis or peritonitis, and you will not have any pyosalpinx aside from that of gonorrhœa (which I believe is much less frequent than it is supposed to be) or the result of criminal abortion or of lack of care or an accidental abortion. It is claimed by some that a retroversion of the uterus does not amount to anything except in certain cases. I would like to see any one of us put a string around the finger or the forearm and make pressure on the vessels there and not get any trouble, and let it go on months and months without trouble. The same thing exists if you get the organs out of position, and it is useless for me to attempt to discuss the importance of it, because Dr. Emmet has done so. But if you can take the uterus and crowd it down, how long does the pampiniform plexus maintain its normal relations? How long will it carry the blood without trouble? Not forty-eight hours. Na-

ture must get relief. It throws out serum, and that is why you find in the pelvis when you open it adhesions to the tubes and the ovaries. The ovaries are congested with blood. It is the cellular tissue and muscular structure that compose the coats of the tube that become diseased. The tube is stopped up. I say that the pathological significance of this is easily seen. I hope to have the pleasure of showing you to-morrow morning a case in which the uterus is drawn completely to one side of the pelvis, where a woman has been impregnated with gonorrhœal infection. It is pouring out of her now. There is no way to rid that woman of it except to take out all the tissue. And still there is no evidence of her having had a peritonitis. There is no history of it. But the cellular tissue is all destroyed. So I say that the importance of this subject has been cast into the shadow by rapid surgery and rapid results. Where peritonitis is due to tubal disease, which did not start in the tube first, when you come to clean out the peritonæum and break up the adhesions due to the exudation of serum, you find the peritonæum is in pretty good shape. Few of us fear any inflammation of it nowadays, simply because it has not been inflamed before. It has poured out the contents of the vessels beneath it into its own sac. Adhesions are there as the result. We should lay great stress on the cellulitis, and the clinical importance of it is so great, so far as I am concerned, that I am studying it and am doing more conservative surgery to-day than I was four years ago. I tap those cysts. I plunge a needle into the broad ligament if I find fluctuation, no matter whether it is pus or serum. I do it in the clinic and let the patient go home. It is not at all risky. The needle goes in at an angle and when withdrawn leaves a valve-shaped opening; the pressure is relieved and there is no leakage from that puncture into the cellular tissue; there is not pressure enough to cause it. Their suffering is relieved. I can show you to-day a case of iliac abscess from cellulitis, with no history of pelvic peritonitis at all. Now, if I had gone into that woman's abdomen and attempted to relieve the iliac abscess by a central incision, I would simply have lost my patient and, if I had done as some operators in gynæcology, I suppose you would never have known of it. This is the way the subject stands: Pelvic congestion is the prime factor, cellulitis follows. Peritonitis is a result or a consequence of salpingitis due to congestion and retention of the secretion of the tube. The tube is stopped; the blood of menstruation or secretion from the tube is retained. It can do no less than cause trouble.

Dr. WATKINS, of Chicago: I believe that pelvic cellulitis does

occur. In two or three cases Dr. Noble, of Philadelphia, has demonstrated the existence of pelvic cellulitis, independent of tubal or ovarian disease. I have treated a case of pelvic cellulitis in which the diagnosis was proved by operation. The patient had had a criminal abortion. She had been ill for three or four months when I was called to see her; a mass existed high up to the left of the uterus. An abdominal incision was made, and a psoas abscess was found. There was no diseased bone, and ovaries and tubes were absolutely free of disease. In this case infection probably occurred through the lymphatics. Those who state that pelvic cellulitis does not occur except through tubal infection undoubtedly overlook the veins and lymphatics of the uterus which traverse the broad ligaments.

Dr. A. P. DUDLEY: The report of a most unique and interesting case can be found in *Gaillard's Medical Journal*, of August, 1887, in which a pelvic abscess and parovarian cyst developed simultaneously in three weeks' time.

Dr. HARRISON (in closing) said: There is one thing that these gentlemen who ignore the existence of cellulitis will admit, and that is that there is such a thing as puerperal pelvic cellulitis, but they say it does not exist outside of that state. That is sufficient: *that it exists*, that is the main thing. I think one great difficulty about them is that they have not the proper conception of the significance of this pathological condition, because parametritis is ever with us; it is like the poor. It is not a thing that disappears like the vapors of the mountains before the sun. It continues for years and years. Even an acute form may apparently get well, and then from very slight causes it may start up again. I am sure every man here must have had some experience with those cases, and that is another confirmation of the doctrine Dr. Emmet has always insisted upon, that when you examine these broad ligaments and find evidences of thickening, etc., you had better be very cautious in any operative procedure. I want to call attention to this extract from a paper by Dr. Maury, who is a very excellent man and conscientious observer—I do not question his conscientiousness at all—but I think these gentlemen are too partial; they do not look on both sides of the question. He says, as to pelvic cellulitis: "I maintain that the time has come when the term 'cellulitis' should be abandoned in connection with non-obstetrical pelvic inflammation." It doesn't make any difference where it comes from, if it is there. We all know very well that the largest contingent of our gynæcological practice is derived from obstetrical cases—that it is the abortions and premature interruptions of pregnancy

and inflammations occurring during the puerperal state that furnish a very large contingent of our gynæcological work. Then I read this: "It is a misnomer; no such condition is known to exist unless to a minor degree as dependent upon a major peritonitis, and its existence then, even if a matter of importance, is difficult to diagnose." This, as we have seen, is incorrect. The question of the origin of these parametric inflammations, in some cases, I think Dr. Dudley has dealt with correctly. But not in the majority of cases. In the majority of cases I think it is due to endometritis primarily. Undoubtedly it may happen that the pus-tube becomes inflamed from the broad ligament. The researches of Bumm in connection with gonorrhœal infection prove that you can have an invasion of the gonococci in the peri-connective tissue, and they may invade the tubes by that route. As to its pathology I must take issue on one thing: the dilated veins would only act as a favorable means for the development of the disease, but we can not have this non-puerperal pelvic cellulitis without an infection. You must have the infection—that is a *sine quâ non*.

Adjourned.

SECOND DAY'S SESSION.

February 13, 1895.

At 9 A. M. Dr. EMMET performed plastic operations before the Association at the Woman's Hospital.

The Association met at 3 P. M. The President in the Chair.

Dr. T. J. WATKINS, of Chicago, read a paper on

Prolapse of the Anterior Vaginal Wall and its Repair by Lateral Colporrhaphy. (See page 410.)

DISCUSSION.

Dr. HANKS: I am glad to hear this paper, for I was very much interested in the first paper that appeared on the subject. We have all had more or less experience with the median operation, and some of us have had quite unsatisfactory results with any operation that we have been taught in the Woman's Hospital or that has been proposed by the staff of the Woman's Hospital, after they went out into practice themselves. I say that, without expectation that any of you will contradict me. When Dr. Watkins' paper first appeared I tried it in two cases, one in private practice and one in the hospital. The hospital case did not do so well as I had hoped, but it was the first case I had ever attempted and I do not think I did it as well as I ought

to have done it or as well as I should do it now. Several of the sutures gave way. I suppose Dr. Emmet does have good results with his operation, but he has to buttress up the anterior wall with the posterior wall, as a rule, and the patients leave the hospital looking very well, but afterward some of those cases that I have done after his methods have come back to me not very much better. I shall be exceedingly happy if more of our friends will practice this method of Dr. Watkins, until we find that it is really no better or that it is really very much better than the old methods. There is room for an operation which will bring up the anterior wall and hold it there. It is the most difficult work in my gynæcological practice to-day—to cure a cystocele.

Dr. CLEVELAND: I understand Dr. Watkins' operation better now than I did from the descriptions in the journals. I have long intended to practice it, but for some reason or other have not done so. I should like very much if I could see him do it. Being familiar with Dr. Emmet's work I have always used that operation, though, of course, not always successfully. We always have some failures. In those cases where I have used Dr. Emmet's operation the majority of them have been satisfactory. I know that a great many of them have been very satisfactory, but I have had some return to me with the cystocele repeated. I think the deductions of Dr. Watkins are those that we can not gainsay. I mean to try the operation at the first opportunity.

Dr. MCGINNIS: I would like to say that when Dr. Watkins wrote me that he had a paper on this subject, he also said that he would like very much to have a case to demonstrate it on at the hospital. I spoke to Dr. Emmet about it and he said he was very anxious to see it, but he did not know of a case in his own practice at that time and that he would not like to do it without the patient's consent. I know if it could be arranged in any way to have Dr. Watkins do the operation, Dr. Emmet would be very glad.

Dr. J. DUNCAN EMMET: Speaking of Dr. Emmet's operation on the anterior wall and the bad results that many men have got from it, or, at least, the negative results, and the negative results which Dr. Emmet has sometimes got from it himself, I can not help believing—and I know he believes the same thing—that the fault is not in the operation but in the operator or in circumstances which the operator overlooks. Dr. Emmet has sometimes failed with that operation, but he has always found a reason for having failed. I have failed with that operation and I have always known why I failed, after studying it out. One reason often is that

complete involution of the uterus has not been produced beforehand. Sometimes there is and sometimes there is not inflammatory thickening of the broad ligaments, or the uterus is not perfectly free from peri-uterine adhesions; the cervix is forcibly held backward in the hollow of the sacrum, while an attempt is made to replace the uterus, and, under these circumstances, the anterior-wall operation is done. As soon as the uterus is released it is going to come back to its original position, where it has been held by adhesions either temporary or permanent, and the operation fails. That is one great reason. Another reason for the operation failing is that the sutures have not been put in with proper care or in a proper way; they may not have been placed high enough up on the vaginal wall laterally. The failure of the operation, owing to the fact that involution of the uterus is not fully completed before the operation is done, leads me to speak of the very common fault of men attempting to do Emmet's operation on the cervix uteri and on the anterior wall at the same sitting. I think this is absolutely contradictory, because the object of the operation for laceration of the cervix is to cause involution of the uterus; until the uterus completely involutes it can not hold its normal, permanent position, either in size or in elevation, in the pelvis and in the vagina. Consequently it is impossible for us to take our proper mechanical bearings for this operation—an essential point. An enlarged cervix and enlarged uterus, in prolapsing, must fill an abnormal amount of space in the vaginal *cul-de-sac*. If we operate under these conditions we will make the mistake of beginning the denudation too far forward toward the pubis and, when the cervix, through involution, returns to its natural size, we shall find the uterus still prolapsed and the pubo-cervical distance still too short. I have seen, both in Dr. Emmet's work and in my own, absolute successes. I have seen an appreciable number of cases upon which the three operations have been done, where the women were restored to an absolutely normal condition, so far as their pelvic organs were concerned. Now, if such results can be obtained from the operation, I think it but logical to say that, when we fail, it is not the fault of the operation but the fault of the operator or of circumstances which the operator does not take into consideration. These cases to which I refer as having been cured have been of all kinds, so far as severity is concerned.

With regard to Dr. Watkins' operation, there are one or two apparent objections that come to my mind. It seems to me a rare thing when the fibers of the anterior vaginal wall are separated to any extent from the pubes or from their attachment to the posterior wall and the

fascia. In doing the median operation we always draw upon the sides of the vagina ; we find a fixed point given us by Nature and we know exactly how much "slack" to take in. By Dr. Watkins' operation he makes a new fixed point for himself in the median line, which it seems to me is a dangerous procedure, because it would be very hard for us to gauge the full extent to which the tissues should be drawn upon laterally. We have no fixed point to oppose our traction. We have simply the pliability of the tissues in the median line, which may easily be overstretched. That is the principal objection. Of course another logical objection to it would be that, if the median operation be right in principle and practice and if the reason we do not always succeed with it is because we ourselves are at fault, any other form of operation is unnecessary.

Dr. PORTER, of Providence, R. I. : I have not done this operation as yet but certainly with the unsatisfactory results that many men get—whether from the fault of the operation or of the operator—I think the new operation is certainly very desirable for us to test. In the description of the operation which Dr. Dudley gives in the December number of the *American Journal of Obstetrics*, I notice he does perhaps a modification of this—taking up some slack on either side of the cervix, making a slight angle with this line which Dr. Watkins describes. I would like to ask Dr. Watkins whether, in case the patient requires a pessary afterward, this operation is going to make any difference about that.

Dr. WATKINS : Not the least difference ; the line is off to either side.

Dr. J. DUNCAN EMMET : I would like to ask Dr. Watkins how long he has followed his cases after this operation.

Dr. WATKINS : Some of the patients operated upon by this method I have observed for five years—since I first did the operation. I have not been able to observe them all, because many of them were dispensary and free-hospital patients.

Dr. BALDWIN, of Brooklyn : I have done this operation which Dr. Watkins describes three times, twice with very good results and once with failure. One of them was done about two years ago. The first one was a failure, I think, because I did not pass my sutures sufficiently deep to catch the fascia that the doctor makes such a strong point of. The matter of median or lateral operation, it seems to me, should be decided with regard to where the laceration is. If it is in the connective tissue on the sides, it seems to me the median operation is all wrong, no matter what your results may be. If the tear is

in the center, then certainly the median operation must do better than any lateral operation. I was very much interested in this operation when Dr. Watkins published his first paper describing it and was also interested when I saw a description of an almost similar operation by Dr. E. C. Dudley some three or four years later. The only difference I could discover in the two operations were two semilunar incisions on either side of the cervix, from his description I should say that they were simply through the mucous membrane, and I failed to see how they could have any appreciable effect. I would like to ask Dr. Watkins in his closing remarks to explain to me the difference between this operation and the one employed by Dr. Dudley.

Dr. BROWN: I would like to ask Dr. Watkins whether in this operation he succeeds in throwing the cervix backward as in the Emmet operation and thereby in part restoring the uterus to its normal position. How this can be accomplished by this side operation in large cystoceles I do not understand.

Dr. HANKS: I feel as though Dr. Baldwin's point was very well taken, and to make it just a little plainer than he has made it: If you find a hernia of the bladder in the median line, certainly Dr. Watkins would not advocate his method. But if it is a giving way of the roof of the vagina at the sides to which the roof is attached, it seems to me his method is the correct method.

Dr. CLEVELAND: In reply to Dr. Duncan Emmet's remarks about doing two operations at the same time, I have been trying to think over my cases. I think in the majority of cases where I have done Dr. Emmet's operation for anterior colporrhaphy I have done a cervix operation also, and I know that the majority of my cases have been successful and I can not see any reason to change my plan of work. As I have had in the majority of cases success, I think these facts go to show that the two operations done at a time are properly so done.

Dr. J. DUNCAN EMMET: It shows how men differ in their observations of the same thing. Dr. Emmet performed the two operations at the same sitting for years, but he gave up doing both together because he had such bad results from this combination.

Dr. WATKINS: I purposely did not criticise the median operation in detail. I have discussed with many gynæcologists the results of median operations for prolapse of the anterior vaginal wall, and with very few exceptions they have said that the results were unsatisfactory. It may be that the principle and technique of the operation are not generally understood. Dr. Baldwin's allusion to the location of the lesion is most important, as the location of the lesion should deter-

mine the character of the operation. If the injury is median, as in the case reported by Dr. Mundé, of course a median operation should be done. If the tear is lateral, however, the median operation is absurd. The injury in prolapse of the anterior vaginal wall is almost universally lateral. Dr. Emmet has demonstrated that prolapse of the posterior vaginal wall usually or always results from lateral lesions. This fact is now generally recognized by the medical profession. The tissues of the anterior wall are subjected to practically the same forces as those of the posterior wall and will naturally suffer in like manner. Lateral lesions of the anterior wall are easily recognized by palpation.

My operation is simply the application of the principles of Emmet's operation for rectocele to prolapse of the anterior vaginal wall. Dr. Duncan Emmet's allusion to fixed points of support argues in favor of the lateral operation. Median operations have no fixed points of support. One of the principles in the lateral operation is attachment of the prolapsed anterior wall to fixed points in the posterior wall. The sutures in the median operations can include very little tissue except mucous membrane, which we all know stretches when subjected to pressure. In order to obtain permanent results in vaginal operations it is imperative to include the connective tissue. Dr. Emmet's operation is, I believe, by far the best median operation, because it is the only one that aims at lengthening the anterior wall. Most of the others shorten it. In Dr. Emmet's denudation about the cervix it is a matter of speculation whether the point on either side of the cervix, or the point in front of the cervix, is the fixed point. If the points lateral to the cervix are the fixed points, the cervix uteri will be drawn upward and backward. If the point anterior to the cervix is the fixed point, the opposite result will obtain. I will say to Dr. Broun, that this operation carries the cervix upward and backward by carrying the entire anterior vaginal wall upward and backward. Formerly I carried the cervix upward and backward by attaching it to the end of the speculum, according to the method used by Dr. Dudley in Emmet's operation, but now I obtain better results by oblique application of sutures as described in the paper, which was also suggested to me by Dr. Dudley. In reply to Dr. Baldwin's question regarding the difference between my operation and the one recently described by Dr. Dudley : Dr. Dudley brings the anterior and posterior vaginal walls together lateral to the cervix by carrying the sutures through the vault of the vagina. I bring them together by carrying the sutures laterally. If in Dr. Dudley's operation more firm fascial support can be safely obtained, it is better than mine.

Dr. MCGINNISS then read the following paper :

Menorrhagia and Metrorrhagia as caused by Conditions other than Fibroids. (See page 418.)

DISCUSSION.

Dr. BAKER, of Boston : There is one thing that should not be lost sight of, and that is that there are a certain number of cases where with the menorrhagia we find no fungosities, we find no fibroids, we find practically nothing in the uterus. It is the kind of case which the general practitioner will tell you there is no difficulty in curing by the administration of ferruginous tonics. We as gynæcologists look for the local cause of the menorrhagia, and yet we must not lose sight of the constitutional side of the question as well. I have been much interested in the last two years in quite a number of cases of menorrhagia in single women of from twenty-three to twenty-eight or thirty years of age where there is an amount of nervous debility and where I have found the uterus enlarged, with an internal measurement of three to three and a half inches. On dilating the canal I find very little, if any, hyperplastic growth, and yet they go on from month to month flowing excessively. I have explained these cases in the following way : that suffering more or less from nervous debility, with the general relaxation of the uterine structures which comes with the menstrual process, there is wanting a stimulus at the end of that process to produce a good contraction of the uterus, and the organ is thus left relaxed. This process going on from month to month, we have a uterus gradually increasing in size, with more or less displacement as an accompaniment. In the class of cases described I have resorted to the following method of treatment : a thorough curetting of the uterus—not to remove any hyperplastic growth, for it seldom exists to any great extent but as a means of producing an involution of the uterus, in other words as a stimulus to the uterus ; following the operation with the immediate use of gauze drainage, which is to be changed from time to time, also as an excitant to the further contraction of the uterus ; and then go on with a general constitutional treatment. Each monthly period afterward for three or four months, is to be followed by four or five days' treatment with ergot, to insure a firm contraction of the uterus. I have had a great deal of benefit also from electricity in its general and local application as an adjuvant to the foregoing.

Dr. A. P. DUDLEY : I had not the pleasure of hearing the paper

and so can only discuss the subject in a general way. The cases of fibroid and new growth I understand are to be left out in the discussion. Now, there are three different classes of cases of menorrhagia and metrorrhagia in which there is neither new growth nor fibroid. The first is where the woman has had a great many children within a few years. In these cases I find that the habit has been an increase of menstruation. A careful examination of those cases has shown that the woman has a soft uterus. The uterus is thick, the tone of it very poor and the lining flabby. I had such a case in my care not long ago, by which I was greatly startled. She came to me and went into my sanitarium. She had constant pain in the side, although there was no evidence of enlargement there. I cleansed the uterus and curetted it. The woman had borne twelve children in seven or eight years. I used the utmost caution, and the first thing I knew the curette passed four or five inches into the abdominal cavity through the uterus, though I did not use pressure enough to have broken an eggshell. I cleansed the uterus thoroughly, packed it with gauze, then opened the abdomen and found the puncture through it. The body of it was perfectly healthy so far as malignant disease was concerned, or any of the conditions which should cause hæmorrhage, but by the side of the uterus I found the veins dilated. I can see where hæmorrhage of the uterus can be kept up by that pathological condition of the blood-vessels. Then there is another class of cases where there is hæmorrhage and no disease of the uterus can be found. I have had two or three cases under my care for years, and in one of them in particular the woman menstruated and bled from the tube. I have had the uterine cavity in that case packed as solidly as I could possibly pack it, and still she would bleed through the gauze, and bleed so that I had to pack the vagina solid, aside from the uterine cavity. I have explored the uterus and touched every portion of its cavity with my finger and found nothing. She passed the menopause four years ago and the whole thing cleared up. There is another class of cases that is attended by this condition of hæmorrhage that the doctor refers to, that I think are more numerous than we are aware of at the present time, and that is a tuberculous condition of the pelvic tissues. It follows a tuberculous condition in other parts of the body, and I do not see why it should not attend a tuberculous condition of the appendages and pelvic structures. I have had several such cases and, although there was no evidence of specific disease in either of the cases, intercourse was always attended by an inflammation, (not gonorrhœal or

anything of that sort but simple inflammation of the glands of the penis) and in those cases I have had the secretions examined under the microscope and found they were tuberculous. I am not going to attempt to discuss the treatment of these conditions by electricity or, in fact, by any other one specific method but simply to apply common sense to whatever form of disease you have and be guided by the results. In the case of the soft uterus I sacrificed the tubes and ovaries to stop the hæmorrhage and harden the uterus. In a woman who has a bleeding tube, if a diagnosis can be made of it, remove it and stop the hæmorrhage. Tuberculous cases, as you very well know, are treated by surgical methods. I have no doubt that a great many cases of soft uteri can be cured by a proper and intelligent application of electricity. In fact, I have used it a great many times myself, but I am not as well satisfied with electricity as a treatment of local disease in women as I ought to be, perhaps—I presume it is due to my ignorance and the fact that I do not understand it as well as those who get good results from its use. It is certainly something well worthy of diligent research and careful study, because to make a correct diagnosis is a difficult matter; it is easy enough to treat the cases intelligently when you have been able to demonstrate to your own satisfaction just what is causing the increase in menstruation.

Dr. J. DUNCAN EMMET: In my experience the commonest cause of these conditions, with the limitation that the paper has placed upon the subject, is pelvic cellulitis, either acute or of long standing, especially in connection with peritoneal adhesions. I have seen a number of such cases in private practice and in hospital, which have been entirely cured simply by local applications and manipulation in the vagina—treatment for the cellulitis and the peritoneal adhesions. The way the latter are acted upon is through the restoration of the normal circulation of the pelvis; and this seems a logical explanation. The hæmorrhage has often ceased with the woman's recovery from her pelvic inflammation, without any internal application to the body of the uterus, without curettage and, frequently, without any other mode of treatment than vaginal applications of iodine and glycerin and hot douches. Of course, very frequently, if the endometrium become sodden and fungosities appear on its surface, the hæmorrhage may be local in origin, but I think even that condition is, as a rule, associated with or preceded by pelvic inflammation outside the uterus.

Dr. BACHE EMMET: Not having had the benefit of hearing the paper read I shall only make a few remarks upon the discussion as I

hear it tend. I believe that one of the most persistent and intractable causes of this recurring metrorrhagia and menorrhagia is some overlooked disease of the endometrium. I think it often happens even when we have curetted the endometrium that something remains, in short that the curettage is not thorough: we leave a portion of thickened endometrium, or some new development or growth is overlooked. I have seen cases of that character in which the curetting seemed to have been thoroughly carried out, more especially such as show something of an adenomatous character under the microscope, in which hæmorrhages would repeatedly show; yet when that treatment was carried to a still greater extent or, to put it differently, when the mucous membrane was absolutely removed from such a region and the surface had been treated by fuming nitric acid, the cases have been cured. So I think we may insist rather more than is commonly done upon vigorous treatment and bring such cases to a happy issue by following on these lines and yet avoid the more heroic course of removal of the organ. Other than that, I would like to call attention to and insist upon the influence exercised by diseased tubes and ovaries. I think that while we may have no actual disease of the tube, yet we may have one or both bound down by pelvic adhesions, where exudate has been caused by any agent, and the tubes and ovaries have been in some way crippled or interfered with. There we have a persistent engorgement, and that acts constantly upon the uterus and produces a congestion, and we have these recurring flows. Then I would emphasize the point made by Dr. Baker, that it is possible a nerve influence may be at work; the organ being in a flabby state and with thickened walls, we have this condition acting as a constant irritant of nerve force, and such a source of irritation will produce this congestion, in its turn followed not by endometritis but by a more or less constant flux, which again entails of necessity the same conditions—the increased weight of the organ and the increased size which is a part of it, the two forces interchanging constantly. As to the treatment, I do not know in how far Dr. McGinnis insisted upon the benefits to be derived from electricity. I think many things are to be learned yet in this line, aside from the local application and its escharotic effect. There is also the effect it has upon other parts in the pelvis, the increased circulation that is produced in the vessels by making them contract constantly, and also the general tone which is given to the nerve system of those parts, by which the nutrition is also much promoted. That, I think, should go along with the general treatment Dr. Baker has insisted on. Through electricity I believe

we also bring great benefit to the system at large. Especially in those cases in which the tubes though being involved yet have no apparent disease in themselves, I think it is through the nerve system that we produce such marked changes.

Dr. BROWN : In connection with the class of cases that Dr. Dudley has brought up, I would like to ask him if he has found that malaria was often the cause of menorrhagia. The question is prompted by my memory of the first years of studying medicine in the South. I was then under a gynæcologist who had a large general practice, and he often told me that a large majority of his cases of menorrhagia he attributed to malaria ; his treatment was always quinine and arsenic in unmarried women, he objecting to examining such.

Dr. BAKER : I have certainly seen cases where it resulted from malaria and has cleared up under the appropriate treatment. And at the same time I would not lose sight of other influences, like a rheumatic diathesis. We must not lose sight of these influences in our enthusiasm to find the cause in the uterus or appendages.

Dr. MCGINNIS, in closing : I want to express my thanks to the gentlemen for having discussed the subject rather than my paper. But one word in regard to the use of electricity. It does seem to me that Dr. Dudley has struck the nail right on the head in saying it is simply an application of common sense. There is no doubt about one thing, and that is the astringent effect of the positive pole, intra-uterine, on the endometrium, where the pole comes in contact within. I have good results, but I would not use it in every case. I would not use it in cases where I had any reason to believe that the canal of the uterus was enlarged—I do not mean lengthened but widened in caliber. This treatment will certainly assist the general circulation of the pelvis and it will clear up many conditions quite as well as any means that I know of.

Intra-uterine Fibroma.

Dr. BACHE EMMET presented the specimen and the following history :

I removed this tumor on Thursday last at two o'clock. The patient has made a very nice recovery. The woman is forty-five years of age. The symptom which has been most pronounced and for which she asked relief has been the constant, rapid growth and the pressure upon the bladder and bowels. The uterus is removed, all but the smallest shell of the crown of the cervix which is left. The question I am interested in considering is whether I should have

attempted to extirpate this by incising the capsule and so getting the uterus to contract or whether I did the best thing by taking the whole uterus out. The specimen answers that point better, perhaps, than we could have done before the operation. But taking into consideration the woman's age and the diminution in contractile force which we would naturally expect in a uterus of that kind, and taking into consideration the thickness of the tissue, which we see here is not a quarter of an inch—could we have fairly counted upon the expulsive effort of that uterus to throw this mass out? No capsule is appreciable here. There is really no firm tissue which can be taken off and stripped from the mass. Then there is the chance of sepsis going on while the process is under way of having the uterus expel the tumor. The specimen further shows that it was beginning to break down in parts and that we had there certain foci of sepsis which it would not have done to have tampered with long.

DISCUSSION.

Dr. A. P. DUDLEY : I simply want to call attention to the different methods of operation and to say that it seems to me that the method of operation used by Dr. Bache Emmet in this case was really the operation to be used. It is very well known that there has been a great deal of talk during the last year about the relative merits of complete hysterectomy, removing the cervix and all, and partial hysterectomy as performed by a number of operators, leaving the vaginal portion of the uterus intact. With a tumor of that size occupying the pelvis it is not an easy matter to make a complete hysterectomy—it is not so easy to do as is the supravaginal as made by Dr. Bache Emmet; and the patient doing so nicely is really proof that the operation was well and properly done. I asked Dr. Bache Emmet this question a moment ago: Providing that she had been a young woman, single or lately married, could he not have incised the fundus of the uterus and removed the fibroid from it, letting the woman have her uterus and still not subject her to more danger? I have a case on my books where I removed a fibroid of about that size, from a girl twenty-seven or twenty-eight years of age. Both tubes and ovaries were healthy and I made abdominal section, brought the uterus up and split it open and took the fibroid out and sewed the uterus up again with catgut sutures. She made an uninterrupted recovery and is now perfectly healthy. I do not think there is any danger in doing such an operation as that, because the cervix will always allow of good drainage, and then the cavity occupied by the fibroid can be sewed

up, the uterine cavity packed and the fundus fastened to the incision with through drainage.

Dr. WATKINS (in answer to a question): I believe Dr. Dudley, of Chicago, limits his operation to cases where the tumor is subperitoneal. His operation is especially applicable in cases where reproductive power may possibly be preserved. He would not employ his operation in cases where the tumor involved the uterine cavity as it does in this specimen.

Dr. CLEVELAND: I would like to ask Dr. Bache Emmet if he considered the question of the removal of the tumor *per vaginam*, before he did the hysterectomy. It strikes me, as I look at the specimen, that it might have been possible to take that tumor out by small pieces at a time. Although I see at the fundus that the uterine wall is very thin, yet I think there is enough there to admit of an operation by morcellation. A year ago I removed a tumor very nearly as large as that, and I think there is a great deal to be said regarding the method of removal by vagina. It saves the woman's uterus, which is everything to her.

Dr. J. DUNCAN EMMET: I was about to ask the same question of Dr. Bache Emmet because that uterus—its size and the size of the tumor inside it—reminds me of a case in which I assisted Dr. Emmet at his private hospital a year ago, where he took out an intra-uterine fibroid quite as large as that, bit by bit; pulling it firmly down with hooks as he cut the tumor out, the whole uterus contracting down behind it. He removed it all at one sitting. The mass was sloughing and very friable. After the removal, with his finger in the uterus and my hand on the abdomen the fundus was apparently not an eighth of an inch thick. This case made a perfect recovery, without rise of temperature, and I saw her two or three weeks ago in perfect health. When Dr. Emmet had started in on this operation, which he did as an emergency case, he feared it might be an adenoma or something approaching the malignant. It was a very instructive case and was the largest tumor I had ever seen removed in that way.

Dr. BAKER: I should think there could be no doubt of the advisability of the operation Dr. Bache Emmet did in this particular case. Of course if the patient had been a young married woman it would have been an open question as to whether he should resort to some other method. But here is a woman forty-five years old, and I think the risk the doctor would have run had he removed the tumor *per vaginam* would have been greater than the risk he has given her in the present operation.

Dr. BACHE EMMET, in closing: In considering this case there were two points which led me to do this—the patient's suffering from the rapidity of the growth, which led me to believe that at her age it was of the soft variety of fibro-myoma largely supplied with blood-vessels, and that we would certainly have very considerable trouble to practice morcellement. Furthermore, the uncertainty of the number, whether we had one fibroid to deal with or whether there might not be others in some portion of the walls. Besides that, the patient's age is forty-five. She was about to finish her menstrual life and came to the hospital asking that she might be rid of the whole mass.

Society adjourned.

TRANSACTIONS OF THE NEW YORK ACADEMY OF
MEDICINE.—OBSTETRICAL SECTION.

February 28, 1895.

The *President*, HENRY C. COE, M. D., in the Chair.

Dr. ANDREW F. CURRIER read a paper entitled

Puerperal Septicæmia : Abdominal Section followed by Recovery ; Abscess in the Right Broad Ligament. (See page 420.)

Dr. CHARLES P. NOBLE, of Philadelphia, as the guest of the Society, then read a paper entitled

Cæliotomy for Puerperal Septicæmia and Peritonitis. (See page 423.)

DISCUSSION.

Dr. BOLDT: The author has gone over the ground so very thoroughly and in such an able manner that there is really nothing left, it seems to me, for one to discuss. He comes to about the same conclusions that I think we have all come to, namely, that in the true septic, puerperal state—the bad puerperal septicæmia, as he terms it—and lymphatic peritonitis, those patients will not recover, no matter what is done. In one part of the paper he stated, that is, in the latter part, that if an operation be done on the first day or so, the patient would have a good chance, perhaps, to recover. Now the question in my mind, if we ever operate on those cases, would be this:

Does not the patient get well in spite of the operation? and on the other hand, we may say, if a patient dies, can we not hold ourselves, to a certain extent at least, responsible, by asking ourselves the question: Would this patient not, perhaps, have got well if we had not operated?

I have had an opportunity, as we have all had, to observe a large number of all varieties of cases, that is, the puerperal septic cases; I have seen patients recover—general puerperal septicæmia patients—where I thought there was no chance in the world for them to get well, where I had made up my mind that they would undoubtedly die if I were to operate; I have let them alone, using ordinary old treatments that we have been accustomed to during the last few years, at least, and a number of those patients got well, whereas the majority, of course, died.

Now we come to the cases of localized pelvic peritonitis of a puerperal origin giving rise to suppuration. No one will dispute the fact that operative interference is the thing to be done. The only question is whether it is cœliotomy, or whether it is by the vaginal route. I, for one, am inclined to favor the latter method, and for very good reasons; namely—that we can make almost as exact a diagnosis, if not fully as exact, by the vaginal operation after we have examined our patient bimanually. We have fully as good drainage, in fact better drainage than we would have by opening the abdomen, and decidedly less shock following the operation.

It is unnecessary for me to go into other details why the vaginal route is preferable, namely, the scar, the shorter convalescence, etc.

When we come again to the cases where a pathological pelvic condition has existed some time prior to the puerperium as an ovarian cystoma, then we should realize that the only thing to be done is prompt work, and we should hardly consider that among the class of cases to which the author has alluded as puerperal septicæmia, because these certainly belong to the ordinary gynæcological abdominal surgery.

We then have another class of cases, a specimen of which was related by Dr. Currier this evening, where we have a localized inflammatory pelvic condition with suppuration in the broad ligaments. For that condition I do not think that we should operate per abdominal section as it is ordinarily called, that is cœliotomy, through the median line. Neither are those exactly the proper cases to operate upon by the vaginal route for the simple reason that it is difficult for us to reach the pus sacs—much more difficult than it would be if we

would adopt the old lateral operation which has been performed for years and years, by operating extraperitoneally and reaching the pus sac that way with drainage by that route. That, I think, is the proper way to deal with that class of cases.

The conclusions which the author has come to seem to me to cover the entire ground. The only question is: Which cases shall we operate upon, how early shall we operate, and when can we say that a patient of the more severe class would recover or would not recover by operation? as you may choose to put it.

I see there are a number of gentlemen here who have had large experience in this line, and I yield the floor to them.

Dr. Lusk: I feel hardly able to speak upon this subject because I have had no personal experience in the removal of either the uterus or its appendages in the early days following confinement. I have been greatly interested, as have all of us, in the remarks of the author of the paper, and I regard his remarks as very judicious, especially those that would give us all to understand the hopelessness of operative measures in general peritonitis—in acute peritonitis in the lymphatic form or in acute cases of septicæmia. I might say incidentally that I have had three cases of tubal disease antedating confinement, in which the tubes were enlarged and gave rise to fever before and during labor, and all terminated fatally.

I have often looked back upon these cases, they were some years ago, and wonder, if operative measures had been resorted to, whether the lives of these patients would not have been saved. There is one thing I think we ought to take carefully into consideration. It would seem as though those cases in which operative measures are desirable in the first week or ten days, or two weeks after confinement, are mostly cases of localized trouble—cases that are confined to the pelvis, and I am not far out of the way when I say that there is no danger of a fatal result in any of these cases when treated in the old-fashioned way. It is very possible that many of these cases will get well though with a long convalescence; in some the symptoms persist and require a later operation, but after six or eight weeks an operation is a very much safer one than during the childbed period. But given a localized peritonitis or a local inflammation, whether in the tubes or ovaries or in the cellular tissue, none of them are likely to terminate fatally if no early operative measures are resorted to.

Then there is one other question, it seems to me, to consider, viz.: the cases of septic endometritis; they are very numerous. Now in cases of inflammation of the uterus associated with general septic in-

fection, taking out the uterus will not affect the result. In these cases the tissues beyond the uterus are charged with coccus forms and the removal of the uterus and the tubes will not prevent the death of the patient.

Then there is a very large number of cases, in which the infection is limited to the mucous membrane, in which there is a fever that runs ordinarily about a week, sometimes it extends into the second week; but all the cases when let alone recover—every one, unless the modern method of curetting the uterus is resorted to—in spite of the fact that the uterus is enlarged and because the odor of the discharges is offensive. So long as the infection is limited to the uterus with no trouble in the tubes, and where there is a remission of the fever in the morning and where the temperature does not exceed for any length of time 102° or 103° , if the curette and the intra-uterine douche are not employed, the cases all get well; but where the curette is resorted to, what happens? You know in localized endometritis we have the mucous membrane invaded by streptococci or other forms of septic germs. Now with the infiltration of the mucous membrane there is formed beneath the latter a barrier of leucocytes through which the micrococci can not penetrate. They form a wall, and where it is not broken down the patient will get well. If however you use the curette, openings everywhere are formed and the lymphatics are exposed to invasion. Thus many simple cases are converted into severe ones, and many cases may perhaps result in which it may afterward be advisable to remove the entire uterus. This is a thing upon which I feel very strongly: the needless conversion of simple, ordinary cases of catarrhal endometritis, which get well when let alone, into severe puerperal cases by the uncalled-for use of the curette and of the intra-uterine douche.

Dr. POLK: I had hoped I would be able to present in connection with such remarks as I can make upon this interesting subject a uterus removed at a clinic on Monday, representing one of the precise conditions which Dr. Noble has called to our attention, but unfortunately it seems to have been misplaced. However, it will afford some basis for remarks upon this matter.

It is in order, seeing that Dr. Noble is not one of us but from our neighboring city, to express my individual thanks to him for coming and for presenting this subject for consideration, because impressed with the importance of it before his coming I have been still more impressed with its importance in view of some of the remarks following the doctor's paper.

A criticism, so far as the doctor's paper is concerned, and one which pertains to certain remarks upon it that have been made, is this : there has been some cause for confusion in our minds, the speakers constantly presenting to us the pathological aspect of this question—the deadhouse aspect of this question—when we need the bedside aspect. It is by no means an easy matter to make the sharp distinctions which Dr. Noble has suggested. I must also say it is a difficult matter, and I confess for myself an impossible matter, to make clinically the sharp pathological distinction suggested in the various kinds of puerperal infection which come before us for treatment.

There is another aspect of the question which it appears to me had better be brought forward, which is the fact that there is a wide difference between the behavior of infections occurring after abortion or after early miscarriage compared with what occurs after labor at term, and the routes by which the surgeon reaches the lesion, which have been formulated for us, will not apply with equal force to the two conditions. I presume that Dr. Noble had more in his mind the conditions occurring after labor at term. It may be that I am broadening the subject somewhat too much, but in order to throw more light upon the subject it seems proper that we should include likewise the conditions as we witness them after abortion, a criminal abortion for instance, which presents one of the most characteristic conditions that we can have.

The conclusions which Dr. Noble has reached are eminently wise. We should be conservative until we know where we stand, and we surely do not know where we stand in this matter of operating for puerperal infection. If it was the question as presented by septic poisoning in some other locations, we could solve it as we do in appendicitis, for instance; this question of operating being identical, in its general bearings, with that which presents itself in cases of appendicitis. We know well that the confusion which existed in our minds concerning the proper treatment in that condition never disappeared until we made up our minds to act promptly, not to wait for dangerous symptoms to appear—anticipating the evil.

Now the dangers underlying the septic inflammations of the uterus are identical with those pertaining to appendicitis, and they kill the patient if not in some way interfered with, but unfortunately we can not get at the offending organ with the same ease, nor can we remove it with the same limited degree of shock ; in the one case as in the other, therefore, we can not formulate for the present any final set of rules in these cases of puerperal infection. It seems to me, therefore,

that if we attempt any suggestion as to the kind of treatment to be pursued in these cases, we must accept the pathological fact that these cases represent septic poisoning, no matter whether the case be a simple superficial endometritis or the beginning of that extreme form of lymphangitis which you have described so accurately or whether it be the beginning of a salpingitis which may ultimately result in a localized purulent collection. If we could determine at the outset the kind of case it was going to be—its limitations—I admit the rules laid down by the previous speaker would have admirable bearings but, as we can not, I think they are open to criticism.

Now, then, as to the criticism. First, as to the kind of operation that shall be done. In contradistinction to Dr. Lusk, I confess to a feeling quite as strong, I believe, as that which he possesses; mine being favorable to the importance of losing no time in reaching the interior of the uterus in every case of puerperal fever, and I use that term to cover those fevers which are the outcome of septic infection, whether they be mild or whether they be grave, centering in the genital canal. Lose no time in getting at the point of origin of the difficulty. Now, when you have reached that point comes the question as to how we shall deal with it. I do not understand that Dr. Lusk objects so much to reaching the point as he does to using the curette after you get there. Am I right?

Dr. Lusk: No.

Dr. Polk: You want to let it alone entirely?

Dr. Lusk: Yes, sir.

Dr. Polk: Precisely. Now that is the point upon which I feel the strongest desire to take issue, and I think in making the comparison between the cases treated along the lines suggested by Dr. Lusk and along the lines which are familiar to all of you, namely, entering the uterus *promptly*, clearing it out either by curette or the finger, and then providing for accurate drainage, the comparison will be in favor of interference. In very many of these cases you can omit curettage but not drainage; so pack the uterus with sterilized gauze and absorb all the material inside the uterine and vaginal canal, and you will have done all that is necessary.

Now comes the question raised by Dr. Noble, as to the kind of operation that shall be done. I wish that the doctor had been clinically clearer in the definition of his cases. I feel that he, perhaps, has fallen into the error which Dr. Lusk fell into, of making the pathological features clear but not making the clinical sufficiently distinct to the average practitioner. It seems to me that it is hard for

us early in many of these cases to say whether we have one that comes within the scope of hysterectomy as laid down by Dr. Noble, or whether they come within the area excluded from it. On the other hand, take a case that begins as a sharp lymphangitis. We all know that if it goes on four or five days and then has a hysterectomy, the record will be about the same as in the case whose uterus is here—the patient will die—because she is already half dead from the poison; so when you add the shock of this operation, it tips the scales in the wrong direction.

The question, therefore, comes back to us, How are you going to differentiate these cases at the outset? because that appears to be the only time when hysterectomy can be of service. I confess this is the point which has been a very difficult one for me to decide.

So far as the rule of treatment suggested by the doctor is concerned, it appears to me that the correct one is to attempt to get to the interior of the uterus as he has suggested, and then if you find, as sometimes happens, the patient does not get better, you are at liberty to go further and open the abdomen. Of course, I am excluding from the category the cases that he enumerated in his first class; that is, such as have pus accumulations or ovarian tumors prior to the occurrence of the labor in which the difficulty occurs. I am alluding to the cases where the lesion is the direct result of poison introduced at the time of the confinement.

The question presents itself as to which is the better route to take. I think Dr. Noble's conclusions are in the main correct. I think where you have your infection at term, the chances are if there are purulent accumulations, that they are all well up in the pelvis, generally located in the iliac fossæ, where they can be best reached from above. Cases of this kind occurring in connection with abortions, I believe can all be reached best from below. I believe Dr. Noble admits that the vaginal method is much the simpler one. If the operation be hysterectomy it should be done from below.

The question now comes up, whether we are justified in these cases in doing anything short of hysterectomy. I have made experiments in this direction with but poor results. The only case I succeeded in saving was operated on the seventh day after delivery, according to the following plan: I first cleansed the interior of the uterus, packed it fully with gauze, then opened wide the abdomen right up to the umbilicus and cleansed the tissues around the uterus. I then completely packed all about the uterus with gauze so as to get drainage both from within and without the uterus, and the patient

made a very good recovery. It was of the lymphatic variety. If I had attempted to take the uterus out in that case the shock would have killed her, because we all know that people suffering from that kind of poisoning do not bear grave surgical operations; nearly all die. This is a half-way measure, but at the same time it is a measure which in the main strikes at the difficulty as far as anything short of an extreme operation can, and it is a measure which is accompanied by little or no shock.

In conclusion then, I will simply say that the point I would like to have brought out in Dr. Noble's reply is the sharp clinical distinction between these several classes of cases. It is to be borne in mind that they are all more or less mixed cases; and I presume the question of which type predominates will influence the decision as to the kind and degree of operation.

Dr. GARRIGUES: I believe that laparotomy will have an exceedingly limited field in puerperal infection, when I hear that in order to have some prospect of a favorable result, it should be necessary to perform the operation on the first, second or third day after labor. I do not think it will be possible to take—at least, it would not for me—such a responsibility. We know that many patients even with bad forms of puerperal peritonitis recover. I have years ago published an article on this subject in the *New York Medical Journal* (January 24, 1885, vol. xli, No. 4, p. 98), based on the observation of eleven cases, of which six recovered, and they were all cases of more or less general peritonitis. The inflammation certainly in all invaded a large part of the abdominal cavity. Now that was obtained by the so-called opium plan—by giving enormous doses of opium. I am happy to see Dr. Waldo here, who treated some of those cases with me, and we certainly found that cases that were desperate recovered—that more than half of the cases recovered. Medical treatment, therefore, has its great value, and it is very doubtful to me if surgical treatment will be able to do better.

Quite another thing is that when some time has gone, when the process has become more or less localized, when the patient has recovered somewhat, then operations may be indicated, and sometimes they are best performed by laparotomy and sometimes by vaginal incision, and sometimes by an extraperitoneal incision in the abdominal wall.

I have quite recently started to take out a puerperal uterus and appendages, perhaps three weeks after the birth of the child, but the patient was so low that when I had made the posterior incision and

the anterior incision in the vagina and got the whole loosened so that I only needed now to put on the clamps and cut out, I foresaw that she would die on the table, and I therefore preferred simply to fill the openings with absorbent gauze, and at least give her a few hours of life yet, so that she should not die exactly under my knife.

In regard to the remarks of Dr. Lusk, I am very much interested in that question, and I must say that I can not go quite as far as he does. I am fully convinced that I have saved many patients' lives by using antiseptic intra-uterine injections as soon as there appeared any sign of endometritis. As to the curette in puerperal cases, I am not much in favor of it. I use it, of course, but only in consultation cases when there is a suspicion that a part of the secundines is left, and I must say that I have scarcely seen anybody under such circumstances recover; but quite another thing is when you have the case yourself from the beginning and there is something left in the uterus; then the proper thing is to go in immediately and take it out, and that is very easily done with the hand, which I very much prefer to any kind of instrument.

In cases of abortion I take it to be of the very greatest importance that the uterus be emptied as soon as possible. By that I do not mean that the fœtus and ovum alone should come out but the endometrium too. Even from the end of the second month one can use so large a dull wire curette that one can put the tip of one's thumb in the opening. By that instrument I remove not only everything that belongs to the ovum but what I take to be very important—the whole endometrium. This forms a large spongy mass, and as long as any of it comes out the curetting should be continued.

THE PRESIDENT: I would like to call attention to two or three points which have not been touched upon by the gentlemen present.

In the first place, a very important question is pre-existing disease in the tubes and ovaries and its exacerbation by labor. In the second place, the subject of appendicitis following labor. Third, localized collections of pus, not always in the pelvis but high up, sometimes necessitating an incision at the level of the umbilicus or even just below the ribs.

I would emphasize the fact that Dr. Noble has referred not so much to the treatment of puerperal sepsis by curettage as by abdominal section.

DR. W. EVELYN PORTER: I think one of the greatest difficulties we have in considering this subject is the fact that the majority of cases do not come under observation until the disease is quite ad-

vanced. Particularly is this the case in the second class of cases which Dr. Noble has referred to. In the cases of which you have just spoken, of course, very frequently the specialist has been consulted prior to the delivery, and in such cases, I think, certainly, early cœliotomy is decidedly needed—that is, cases where tubal disease, particularly, has been diagnosed during the course of the pregnancy prior to delivery. In these cases, if there is any elevation of temperature, any degree of shock or evidence of early sepsis or infection, certainly then I think all will agree that prompt cœliotomy is indicated. A great many of these cases, however, have not been diagnosed by the specialist—the specialist has not seen them—and the attending physician has no idea as to the cause of the sepsis; therefore there is a very decided confusion and difficulty in studying the case.

In cases of the second class, where the infection is due to difficulties other than pre-existing disease of the tubes or uterus or of the appendix, certainly there is a very grave question as to whether cœliotomy or certainly hysterectomy is indicated. The reason for this question is the very fact that, as Dr. Noble shows us, the accurate diagnosis as to the location and character of sepsis can not be made clinically. Practically it can not be made with any degree of accuracy where the specialist is called in after delivery, not having had an opportunity to appreciate the conditions prior to delivery and finding simply the patient with a comparatively advanced stage of sepsis. We can not clinically differentiate the lymphatic cases and those in which the conditions are more local and within the uterine tract and adjacent peritoneal cavity. If cœliotomy is to be done at all, I think certainly it should be limited to the simple irrigation and drainage, unless we find a diseased tube; but I do not at all advocate the operation of hysterectomy. I think if sufficiently extensive sepsis is present to render the patient's condition critical, the mere removal of the addition of the small amount of sepsis contained in the uterus after curettage will make very little difference. Certainly the shock and additional danger of removing the uterus should contra-indicate the operation. The irrigation of the peritoneal cavity, the free drainage from below if possible, or combined drainage below and above, I think, is all that is indicated and that as rapidly as possible, with as little shock as possible to the patient.

Where cases are observed and brought to the attention of the specialist early in the course of the sepsis, I think there are very few of us who would feel particularly anxious, in that thorough removal of

sepsis from within the uterus and prompt drainage will save a large percentage of cases. That is, sepsis discovered early and the specialist consulted, the question of cœliotomy should hardly come up; but in the more advanced cases, I wish to advocate simply the irrigation and drainage and not hysterectomy.

Dr. WALDO: In August and September, 1882, I was senior assistant at the New York Maternity Hospital and was quarantined on a large number of septic cases under Dr. Garrigues. There were a number of cases of general peritonitis—some twelve or thirteen. Some of those died. In addition to that, there were a great many cases of comparatively mild sepsis, that we termed parametritis. At that time the term parametritis was used as indicating localized peritonitis, or localized attacks of cellulitis and salpingitis and more or less localized inflammatory disease about the uterus, with septic metritis and endometritis. All of those cases got well, and there was not a laparotomy performed for their cure. In fact all recovered excepting a few of the cases of general peritonitis with marked general septic infection. They were all treated in a similar manner—that is, the uterus was emptied thoroughly and completely and thoroughly douched and good drainage established and then the patient was treated in a general way; usually ice or cold in some form was applied to the abdomen.

To-day I looked over the cases that I have had in my service at Lebanon Hospital and found that fourteen cases of puerperal septicæmia had been sent into the hospital. Most of them came in after labor and a few after abortions. They varied in intensity. There were several of them in which I thought cœliotomy would probably reveal a diseased structure that should be removed; but in each instance the patient's condition was so bad that I was sure she would never get off the operating table alive. Out of the entire number, one case that had a very high temperature and very severe general symptoms—temperature 105° and pulse 130 or 140—died. A lot of septic material was taken out of the uterus but she died five weeks after she came into the hospital from an exhaustive diarrhœa due to general septic poisoning she had when she came in. A cure having taken place in the local symptoms.

I wish to say also that the very bad cases that Dr. Noble has mentioned die any way; you do not want to do cœliotomy. The other cases do not die. Of course, there are local accumulations of pus—everybody sees them. In the cases I looked up to-day there were four of pelvic abscess, that were drained without performing cœliotomy, and afterward the patients went out well.

I have had cases where, later, cœliotomy has discovered a diseased tube that required removal, and several times I have had the instruments and everything prepared to do an emergency operation, but the emergency did not seem to me to present itself and the abdomens of these patients have not been opened, with the results related.

I am much obliged to Dr. Noble for bringing up this subject, which I think is of the utmost importance to us.

Dr. G. M. BOYD, of Philadelphia, (guest of the Society): The ground has been so well covered already with regard to this important subject, and as I have been a long time associated with Dr. Noble and necessarily knew what his ideas were in regard to interference in puerperal affection before the doctor read his paper, I will only make a few remarks. It seems to me that to decide whether a case is to be operated upon or not we must necessarily determine the condition existing. I think very often where we have an elevation of temperature and sometimes infection, we look upon it as uterine infection alone, the patient is given a uterine douche and we consider that the infection is chiefly or entirely intra-uterine. We lose sight of the fact that we have frequently other infection; we may have an infection which is due to the effects of inflammation in the vagina or perinæum or even in the cervix without, possibly, the cavity of the uterus being affected. This, I think, explains the elevation of temperature that we have in maternity work where we intend to do clean work, in spite of the fact that we have not the tender uterus or offensive leucorrhœa; we have an elevation of temperature. So that I think we should attempt to localize or find out as nearly as possible the focus or the source of the infection. Is it a direct uterine infection or is it infection primarily from the cervix or from some portion of the vagina or perinæum?

That it is difficult to decide upon cases needing operative interference is evident, and I think Dr. Noble's paper contributes to the clinical aspects of these cases.

It is easy, as the doctor, I believe, stated, from a pathological standpoint to determine which should be and should not be operated upon but very hard from the clinical aspect.

I had not very long ago a case which resembled that described by Dr. Currier in an extraperitoneal pus accumulation in a puerpera which to me explained the origin of the infection—the probable ways of vaginal or perineal infection—and this case I have thought of during the evening, as being one of interest because of the difficulty that existed there in determining what operation would be wise. The

patient was exceedingly septic upon admission to the hospital, and there was a mass found over the ovarian region and it was impossible to determine whether it was an intraperitoneal or whether it was an extraperitoneal accumulation. The patient was examined by the late Dr. Goodell about a year ago, and he was doubtful whether it was a puerperal pelvic abscess or a puerperal salpingitis, so obscure was the tumor. In spite of the fact that cellulitis has had its day and very many question the existence of puerperal cellulitis it seemed to me from the history that the trouble was originally of this nature. If we had performed abdominal section in this case she would have died. An incision was made just above Poupart's ligament. After cutting down deeply, an extraperitoneal pus cavity was opened and the patient recovered. In that case I had the opportunity of afterward examining the patient, and I found there was no trouble on either side existing—no tubo-ovarian disease.

In regard to the operation where it does seem advisable, operative interference must necessarily be done early because of the fact that if it is a long-continued, puerperal case, it is usually a localized trouble. If the operation must be done early the uterus is not well involuted, and it would seem to me because of this complication, in a large uterus, it would be wise to make the incision from above.

I desire to thank the Society for the privilege of entering the discussion.

DR. BROOKS WELLS: About nineteen months ago I did a laparotomy on a puerpera for a pus accumulation, which presented features of interest. A woman had been delivered with the forceps. She promptly got up a high temperature from sepsis and was curetted, not once but four or five times at intervals of five or six hours, with a dirty curette and without antiseptic precautions. She grew steadily worse and finally went into a condition which approached collapse. When I first saw her she had an evident septic peritonitis, with an uncountable pulse, a distended abdomen, a temperature a little over 106° , pinched features and cyanosis. On examination *per vaginam* I found, besides, a fluctuating mass on the right side. She was almost moribund, but I concluded that a laparotomy would give her her only chance. I weighed the question as to whether laparotomy should be done or whether the mass should be opened *per vaginam*. She was put on the table and the abdomen opened. It was found that the fundus of the uterus had been perforated by the curette and that the vermiform appendix was adherent across this perforation. The appendix in this case should certainly be credited with saving

the woman's life. The right broad ligament was distended with pus which was oozing from a small opening into the peritoneal cavity. The intestines were reddened with beginning peritonitis. The pus was sponged out from Douglas' pouch and the lower pelvis, the abdomen packed with gauze and the abscess opened and cleaned out as thoroughly as possible. Then the soiled gauze was removed. I did not wash out the abdominal cavity because I was afraid, if I did, that it would disseminate the septic material over areas yet uninfected. The pelvis was packed again with two yards of gauze and she was put to bed. The gauze was not removed for a week. The temperature fell at once, she began to improve and finally entirely recovered. The case is interesting as showing what may be accomplished even in an apparently hopeless case.

The right tube which lay over the broad-ligament abscess was normal; there were no adhesions about it, it was not distended or inflamed in any way more than the adjacent coils of intestine; so the case illustrated that rare condition—pelvic abscess without tubal trouble.

Dr. TUCKER: I do not wish to leave this room without raising my voice in protest against *cœliotomy*. In talking about sepsis we have got away from the subject entirely. We have been talking about cases that belong to the gynæcologist, which ought not to be put in with those belonging to the puerperal state. I can not too strongly emphasize the wisdom of Dr. Lusk's words. The more cases you let alone the more will recover. Out of over four thousand cases, most of which have passed under my observation, and in which one hundred and fifty or two hundred cases of puerperal fever were present, some of which were as bad as could be, I can not recall any instance except one which would have stood any possible chance with laparotomy; that one possibly would—it is simply a possibility. I can recall a great many that certainly would have died if laparotomy had been done.

After the cases pass on out of the puerperal state, that is, over a month after labor, then I think that it has passed out of the subject under consideration. Those are cases that are no longer *cœliotomy* for puerperal sepsis; those are cases which belong strictly to the gynæcologist and not to the obstetrician.

The cases that occur in labor, mentioned by Dr. Noble in his very excellent paper, where there is some ruptured pus collection and infection from gangrenous tumors, would come properly under the head of *cœliotomy* for puerperal sepsis, and we all agree that abdominal section would best relieve such cases.

I can not imagine any one wishing to do cœliotomy for general sepsis in the puerperal state. I must say that medical treatment will save many more such cases than surgery ever will.

Dr. CURRIER: As a matter of fact, the majority of the cases which are seen by those of us whose work is largely in the gynæcological line are cases which have gone on in the hands of the general practitioner, the disease has developed and gone through the various stages which are peculiar to this disease, getting better and getting worse, until finally, when the case is almost at its end, the gynæcologist is called in. I do not think that we can exclude these from consideration as puerperal cases, because they have never fairly finished their puerperium.

I felt in the progress of the discussion that the remark which was made by Dr. Polk, of its being difficult to classify these cases, was a very true one. There is such a variety of conditions with which we are confronted in these various cases, that we have to study each case separately; yet in a rough way, it seems to me that we can consider them in three classes; at least, such would be my plan for those which have come to me for consideration: those limited practically to the uterus; those in which the inflammation extended into the surroundings of the uterus, the inflammation being there limited to the annexa, the pelvic peritonæum or the pelvic cellular tissue; and, third, those cases in which the inflammation is general and peritonitis is diffuse.

In regard to the first of these classes, the question of cœliotomy or abdominal section is to be excluded. There is no occasion, (and neither would I be willing to feel with Dr. Lusk that these cases are to be let entirely alone) because the experience which has come to me in such cases has been that curettage, irrigation and drainage result favorably; therefore I should be unwilling to drop that line of treatment.

As concerns the second class of cases, those in which there is a local extraperitoneal inflammatory condition, it seems to me that the question of abdominal section is very pertinent, and as I said at the beginning that my experience was limited largely to those cases, which have gone on for some time after the confinement, I should hardly be able to discuss the point raised by Dr. Noble as to an operation within a few days after confinement or within a few days after the inflammatory process had begun; but, seen as these cases I speak of are by me, at a late day, if the sepsis has not gone too far and if the patient is not thoroughly intoxicated, the chances by means of an abdominal section are good. I have operated in four such cases with but one

fatal result. If, on the other hand, peritonitis is diffuse and the peritonæum generally infected, it is absolutely futile to attempt to relieve them by abdominal section. I operated upon two cases of that character and both promptly died.

As to the question of hysterectomy in cases of this character, we must also consider the point which I mentioned a short time ago, and that is, the degree of sepsis. As the previous speaker has said, if the patient is thoroughly septic you are not going to remove the source of trouble by removing the uterus. And then, on the other hand, the alternative is not a pleasant one of removing the uterus in the incipient stage of the disease; so, between the two alternatives, it is difficult to know what to decide upon. As a general rule, for myself, I should object to removing the uterus and I should prefer, if the effects of infection were evidently not limited to the uterus, to operate either by vaginal incision and get as satisfactory drainage by that route as possible, or else in such cases as those which I have mentioned, and particularly in such cases as that of which I narrated the history, to perform abdominal section either by the median incision or by incision at some other point where the products of inflammation can be got at and removed.

The PRESIDENT: I think the reader will infer that we have not quite reached the stage in New York when we are willing to remove the uterus for puerperal sepsis. I know I have not found a case in which I felt justified in doing so, although I have been tempted once or twice. I would hardly agree with Dr. Tucker in placing so many of these cases outside the province of the obstetrician. There are certainly septic cases arising during the first week which demand prompt attention, and I do not see why we should not apply the same rule to these as to other cases of surgery—where there is a collection of pus, to let it out.

We shall be glad to have Dr. Noble, in closing, answer the various questions which have been asked.

Dr. NOBLE: I am very glad that the subject has brought out so full a discussion; and I am not at all surprised that there are differences of opinion concerning the subject, because I very frankly confess in my paper that there are many points that are far from being settled.

The first point which struck me was raised by Dr. Boldt, that probably the operation kills a number of these patients who would recover if not operated upon. I think it is a pertinent suggestion, and I tried to deal with the point in the paper. When a patient, in

the judgment of the surgeon, is suffering from general septicæmia to such an extent that she will die irrespective of local conditions, it is folly to operate upon the case. In other words, if the septic element is so marked, I would not operate, because the shock of the operation would hasten the death of the patient.

Dr. Boldt, as we know, is an ardent advocate of operating *per vaginam*, but it seems to me the arguments in the acute puerperal cases do not hold as they do in the chronic inflammatory cases. I think the men who advocate operation from below in those cases have certain arguments in their favor but, as referred to by Dr. Coe, it happens not infrequently that there are collections of pus up in the pelvis and out-of-the-way places, that can not be reached from below. Likewise, in dealing with a spreading peritonitis or with localized peritonitis with septic absorption, when the patient is getting worse in spite of treatment, we all know such cases die if left alone. I think it is perfectly proper to operate upon them, and you may save a number of them; and certainly in those cases wide drainage is a safeguard and as important as anything done in operating. We can not make use of such wide drainage from below.

Dr. Currier's case I was interested in because to my mind it corresponds with numerous ones which I have reported myself. Was it not a case of broad-ligament abscess pure and simple? My cases have recovered just as Dr. Currier's, and his method of operating is the same that I have always used, namely, to open the abdomen to see if pyosalpinx is present as a complication and, if not, to open the abscess by direct incision in the groin.

With reference to what Dr. Lusk has said against the use of the curette, I think it is the old question of how we shall deal with a septic wound, and I believe that none of us are willing to leave septic detritus in any part of the body and especially not in an infected uterus. In spite of my respect for his opinion and wide experience, I shall continue to clean out as thoroughly as I can all infected material from the uterus.

The next point which perhaps it would be well to touch upon is that brought up by Dr. Polk, namely, how distinctions are to be sharply drawn in these cases. Of course, in discussing such a broad subject as pelvic sepsis, one must discuss typical cases; otherwise there is absolute confusion. But we all know it is difficult to make out typical cases, and I think the broad lines drawn in the paper will be found fairly accurate in clinical work. The distinction between the cases in which sepsis is the principal element and those in which

inflammation is the principal element is not difficult. The characteristics of the two conditions are so well marked that all of us are able to distinguish them.

Dr. Polk is inclined to put me down as an ardent advocate of vaginal hysterectomy, whereas the fact is that each time I do vaginal hysterectomy it seems to me a more disagreeable operation than I had thought it at the previous operation.

Dr. Porter discussed the question as to how we will know when we should do hysterectomy, how we will distinguish those cases in which hysterectomy should be done early. My only suggestion would be that made in the paper, namely, if simpler measures fail, are you going to fold your hands and let the patient die, as suggested by Dr. Tucker, or do something else? I think that is the way to look at it. If you have an infected uterus and you have douched it and curetted it, and in twelve hours the patient gets worse and, after another twelve hours, still worse, and you see that peritonitis is setting in or septic intoxication is marked, I think all will consider this a fatal case if we fold our hands. Those are the cases in which, in my judgment, a hysterectomy is indicated. Peritonitis is not yet marked, general sepsis is not yet marked; but the case is going from bad to worse in spite of the treatment adopted. I do not believe the cases are common; the fact that we have so many aggressive surgeons and so few hysterectomies shows there is only a limited number of these cases. But I am not inclined to agree with Dr. Tucker that we can do nothing but use medicinal treatment and, in case that does not succeed, must resign our patients to death.

I was much interested indeed in Dr. Wells' case, which I think was a most interesting one, in the first place pathologically, as one of the cases of broad-ligament abscess and, in the second place clinically, as showing how even under desperate circumstances, if the surgeon has the courage of his convictions and is willing to take the chances, he may occasionally save life. I think the lesson of the case to all of us is, not to feel that many of these cases are so desperate that we should not be willing to jeopardize our reputation as successful operators by extending the resources of surgery to them. It requires courage and self-sacrifice to save the lives of those desperately sick, but we should not shrink from our duty.

The PRESIDENT: It is hardly necessary for me to express my gratification at the presence of this large audience and to repeat my earnest desire to make the Section a success in every respect; I announce that next month a paper will be read by Dr. E. W. Cushing,

of Boston, and the following month one by Dr. Edward P. Davis, of Philadelphia. I have taken the liberty to invite these gentlemen from out of town in order to lend additional interest to the meetings.

OBSTETRICS.

BY J. D. BISSELL, M. D.

Dilatation of the Bladder and Ureters and Hydronephrosis in a Still-born Infant.

Dr. J. W. BALLANTYNE (*Edinburgh Med. Jour.*) exhibited, before the Edinburgh Obstetrical Society, December 12, 1894, a stillborn infant delivered at the eighth month; there was present in the bag no more than one fluid ounce of liquor amnii. The child had talipes varus of both feet and drop-wrist of the right hand. On opening the abdomen the bladder and ureters were found greatly distended, and also bilateral hydronephrosis. The urethra was found to be occluded near to the meatus urinarius. He concluded, from these facts, that the liquor amnii, in part at least, is derived, in the latter months of gestation, from the renal secretion of the fœtus.

[We accept the theory that the liquor amnii proper is secreted by the amniotic sac, while its bulk is increased by the urine of the fœtus; but we do not think that the association of oligohydramnion and retention of renal secretion would alone justify the conclusion that the deficiency of the liquor amnii was due to the retention of the urine.

We believe the amniotic sac to be a secreting surface from the fact, among others, that cases have occurred where the sac contained its full capacity of fluid without there being present a fœtus. The secreting membrane may, perhaps, be influenced by certain conditions, giving rise to oligohydramnion on the one hand or hydramnion on the other. We would also suggest that the renal secretion when emptied into the sac may have a stimulating effect upon its cells.]

A Case of Double Extra-uterine Pregnancy.

Dr. J. M. DUFF (*Cincinnati Lancet-Clinic*, December 29, 1894) reports the case of a woman who five years after marriage presented symptoms of pregnancy for the first time. At the end of the second month she suffered pain in the left iliac region where, on examination, three

was found a tumor. Extra-uterine pregnancy was diagnosed and operation was advised but not consented to. Shortly thereafter, the patient became suddenly very ill with pain on the left side and flow from the uterus, but upon examination the tumor could not be found. After this she rapidly improved, occasionally having slight pain in the lower part of the abdomen. Three months from this time she again missed her changes, and in nine weeks she had a miscarriage, the ovum being expelled into the vagina. Five months after miscarriage and ten weeks after the cessation of her changes she was again taken very sick. Examination revealed a tumor in the right side. Membrane was discharged from uterus and patient began to waste slowly. She was operated on six days after she was taken ill. A tumor of the right tube was found, almost on the point of rupture, containing a small fœtus inclosed in its membranes. On the left side there was found another sac, which was attached to the Fallopian tube, and which contained what was considered placental tissue. The patient made an uninterrupted recovery.

Uterine Pregnancy occurring with Extra-uterine Pregnancy ; Fœtus of Three Months in Utero ; Fœtus of Sixteen Months in Abdominal Cavity.

DRS. J. C. MCCLINTOCK and FRANCES STORRS (*Kansas Medical Journal*, January 12, 1895) report the following unique case: Patient married twelve years, had only one child, born the year after marriage. Subsequent menstruation always regular but somewhat painful. On August 20, 1893, the third day of her regular menstrual period, she was taken with a severe chill followed immediately by convulsions. The abdomen soon became distended, accompanied by severe pain. On October 22, 1893 (the second menstrual period following illness), she had a chill, succeeded as before by convulsions. The right side was noticeably enlarged and tender. January 1, 1894 (after her fifth menstrual flow following first illness), she flowed profusely for nine weeks. The milk in her breasts was abundant. The pain in the side increased greatly and morphine had to be administered daily. In March, 1894, about the time of regular menstrual period, hæmorrhage again became profuse, lasting several days; clots and pieces of flesh were passed; there was also a sudden flow of what was then thought to be urine. The pain soon subsided and the abdomen was greatly reduced in size. After this no menstrual signs appeared and she convalesced rapidly. September 19, 1894, an irregular *specialist* passed a sound into the uterus. A fœtus four inches long was expelled the

next day, everything being perfectly fresh. Abdominal section was performed October 1, 1894, and a dead fœtus was found, immediately under incision, without broad-ligament covering. It was supposed that this conception occurred in June, 1893; the primary rupture, August 20, 1893; the secondary rupture, October 20, 1893. The folds of the broad ligament and distended tube nourished the placenta, and the fœtus lived until false labor occurred, March, 1894.

Tincture of Iodine in Post-partum Hæmorrhage.

Dr. R. A. BROWN (*Massachusetts Med. Jour.*, February, 1895) strongly urges the use of the tincture of iodine (one part to four of water) in the treatment of post-partum hæmorrhage. He considers its power to excite contraction of the uterine tissues by reflex action, its chief efficiency.

[The tincture of iodine is doubtless a valuable remedy in these cases, but we think it unwise to teach that it surpasses all others. Nothing will excite reflex action in the uterus more completely than the combined effect of one hand in the uterus (first making sure that the hand is thoroughly clean), and the other grasping tightly the fundus over the abdomen, as when expelling a placenta by Credé's method. The combined irritation of the walls of the womb from both within and without will immediately produce a strong contraction of its muscles and insure the closure of its sinuses. The clots should first be removed by the hand in the uterus. If hæmorrhage is due to the rupture of an artery a ligature or deep suture is of course called for.]

Extra-uterine Pregnancy complicated with Pyosalpinx.

Dr. H. T. WILLIAMS (*Buffalo Med. and Surg. Journal*, February, 1895) reports a case of this rare complication. Patient's menses ceased in December, 1893, other symptoms of pregnancy also developing. April, 1894, a sudden flow of water from the vagina occurred, continuing all day. Sharp pains were occasionally felt in the abdomen. In the early part of August of the same year she had an attack of severe pain resembling labor pains, followed, in a few days, by a normal menstruation. Vaginal examination revealed a tumor of considerable size lying somewhat to the right of the womb. Abdominal section was performed September 10, 1894, and a macerated fœtus about the size of one of five months was found covered by its amniotic sac. The sac contained no fluid and was firmly adherent to the fœtus. The placenta was found situated in the Fallopian tube not far from the

uterus. A part of the tube near the placenta was sacculated and contained several ounces of pus. The ovary was not diseased. The entire mass with ovary was removed and the patient made an uneventful recovery.

A Case of Double Uterus with Pregnancy of the Extra One, resembling Abdominal Pregnancy; Normal Delivery of a Six-and-a-half Months Fœtus after Laparotomy.

Dr. R. O. OWEN (*Virginia Med. Monthly*, January, 1895) reports a case with this unusual complication. The patient presented the following history: Aged twenty-five years; married four years; one child two and a half years old. On the 15th of July, 1894, about four months after the cessation of her monthly periods, she experienced a sudden and sharp pain in the right iliac region; the pain continued severe for several days. A complete procidentia, which was soon reduced, complicated this condition. Pains resembling those of the second stage of labor occurred on the 2d of September, 1894. The movement of the child in the abdomen could be plainly seen and felt. The sound was with ease introduced into the uterus and was freely movable within the cavity. Diagnosis of extra-uterine pregnancy was made and the abdomen was opened September 14, 1894. A pregnant womb with abnormally thin walls was found; its muscular striæ were arranged in perfectly vertical and parallel lines, and it was connected with the non-pregnant womb by a tube two and a half inches long and one and a half inch in diameter. The right Fallopian tube, ovary and broad ligament were found normally attached to the pregnant uterus; the left appendages were also normal and attached to the non-pregnant uterus. When the pregnant uterus was raised in the abdomen an assistant was then able to pass his finger into the tube connecting the two uteri. The condition was not interfered with further and the abdomen was closed. On the second day after the operation, a dead male child was born, weighing with the placenta three pounds. The patient died on the fifth day after operation. Dr. Owen considered death to be the result of "some sepsis, coupled with the combined shock of the laparotomy and subsequent labor." The subinvolted condition of the non-pregnant womb showed that the first child was conceived in it.

Separation of the After-coming Head during Delivery.

Dr. DUNCAN B. MACKINTOSH and Dr. S. A. CLARKE (*British Medical Journal*, March 9, 1895) report three cases of separation of the

after-coming head during delivery. Dr. Mackintosh's patient was attacked with severe vomiting which persisted for two days before labor began. The pains were strong and in three hours the os was fully dilated ; membranes intact and the buttocks and both feet presented. The membranes were ruptured and a foot was seized and gentle traction used, but slight advance was made. Upon making greater traction the leg gave way between the knee and ankle, all of the tissues but the skin having ruptured. The patient was put under chloroform and gentle traction made upon both legs. Both knees immediately became disarticulated and then both hip joints. By pressure from above the body was slowly delivered. No pulsation was found in the cord. The body was very large and by allowing it to hang down for a short time the structures of the neck gave way and notwithstanding the precautions taken separation occurred—the head remaining in the uterus. The hand was then passed into the vagina and a search was made for the mouth. This was found lying behind the pubes. A finger was passed into the mouth and the face was hooked downward.

This was finally delivered by passing a cord through the mouth and out of the pharynx. Gentle traction was made upon the cord and the fingers of the disengaged hand used to guide the head and to protect the vagina from the bones of the vertebra. The child was at full term. The head was hydrocephalic, the body large, and the limbs very short. The mother made an excellent recovery.

Dr. Clarke's two cases of separation of the after-coming head were in premature labors. In one the fœtus was six months, the other eight months. On bringing down the feet he exerted moderate traction and was surprised to find a headless body in his hands. He attempted to deliver the head by forceps, but with no success and with the cephalotribe with no better result. He then introduced his hand and succeeded in bringing down the face, and with a finger in the mouth got the head away with comparative ease.

In the next case, unlike the other, the child was in a condition of putrefaction. In this case he did not attempt to deliver the head with forceps, but brought down the face with his hand and by traction with a finger in the mouth he succeeded after considerable difficulty. In both of these cases the mothers made excellent and uninterrupted recoveries.

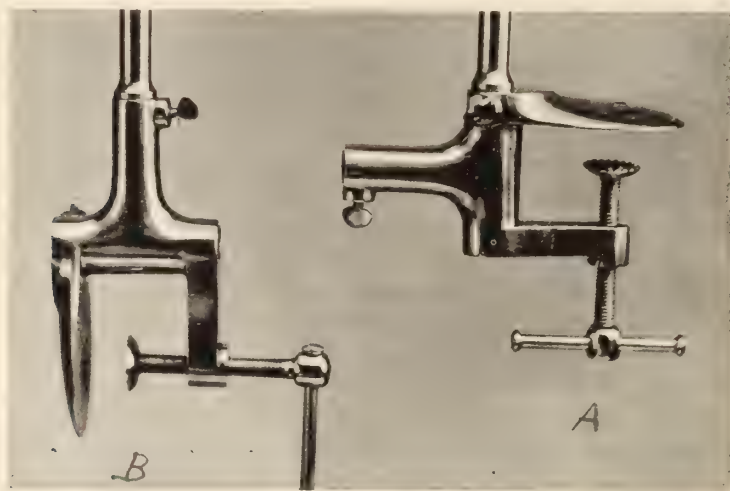
The reporters of these cases agree that Dr. Boxall's suggestion to bring down the face in separation of the after-coming head to be of much practical value.

NEW INSTRUMENT.

LAMBERT'S IMPROVED CLAMP FOR EDEBOHLS' LEG HOLDER.

BY E. B. LAMBERT, M. D., PORT JERVIS, N. Y.

Practitioners living remote from other physicians find the various forms of leg holders a great convenience. My inability to attach the Edebohls leg holders to the side of a bed, where I frequently wished to use them, led me to devise a clamp whereby the holders can be fastened to the side of the bed or any other board that stands on its



edge. In the illustration Fig. A shows how the clamp can be fastened to a table. Fig. B shows the advantage of my improvement more clearly than words. My clamps were manufactured for me by George Ermold, 312 East Twenty-second Street, New York. With this improved clamp I have found the leg holders of especial value when attending my obstetrical patients who reside in the country and require instrumental delivery or perineal operations.

THE
AMERICAN GYNÆCOLOGICAL
AND
OBSTETRICAL JOURNAL.

MAY, 1895.

THE EARLY HISTORY OF VAGINAL HYSTERECTOMY.*

BY GEORGE J. ENGELMANN, M. D., ST. LOUIS.

The history of vaginal hysterectomy, this supposedly most recent of gynæcological operations, takes us back fully one century and is of peculiar interest, because every step in its development can be clearly traced and because it reveals to us a soundness and broadness of medical thought and a perfection of gynæcic surgery in the first decades of this century which is as instructive as it is surprising.

The discussions of that day in reference to carcinoma uteri cover much the same ground as that recently gone over, and the conclusions reached as to the relative value of high amputation and complete extirpation are the same as those now attained as the result of more general experience; *then*, the views were those of the advanced surgeon only; *now*, they are held by the profession at large. It shows us how useless a discovery is and how readily forgotten if not in line with the march of general progress and in keeping with the spirit of the period.

Not until the last decade has this operation become one of the accepted surgical procedures, and yet as long as three fourths of a century ago it was successfully performed by the methods now in vogue and described with an accuracy and attention to detail now rarely found.

* Read before the Southern Surgical and Gynæcological Society, Charleston, November, 1894.

Some new procedures or discoveries are the results of inspiration or the product of independent thought, and others, as it is so strikingly instanced by this operation, are the culmination of a series of progressive steps, the natural sequence of gradual development.

In this case accident and ignorance paved the way : the cutting off of the inverted and *prolapsed puerperal* uterus, under the supposition of its being a neoplasm of some kind, was the first step ; if this could be so easily accomplished the *prolapsed cancerous* uterus could certainly be removed, and this was proposed (Wrisberg, 1787 ; Osiander, 1793) and at length accomplished (Osiander, 1801), by drawing down or artificially prolapsing the organ ; the uterus had now been successfully amputated above the seat of disease, and then, in a favorable case, complete prolapse, it was cut away, together with the appendages (Langenbeck, 1813), leaving but a little of the fundus with its peritoneal covering ; it was but a trifling step further to total extirpation, and this soon followed (Sauter, 1822 *) and *in situ* but without the application of ligatures, which seemed an impossibility yet was accomplished a few years later (Dubourg, 1829) after bringing down the partially liberated organ, and this completed the last step in the perfection of vaginal hysterectomy.

The possibility of successful removal of the cancerous uterus *per vaginam* had been demonstrated, "but the opposition of a non-progressive and jealous profession and of a public terrified at an undertaking so bold and new," prevailed, and the operation was forgotten to be rediscovered in the new surgical era, a period better adapted to such incisive procedures.

The cutting off of a prolapsed puerperal uterus by the midwife was an accident repeatedly recorded in recent centuries and even in antiquity but passed unheeded until the latter part of the last century, when detailed reports of such cases now and then appeared in the medical journals, notably the one related by Wrisberg (*Goettinger Gelehrter Anzeiger*, No. 81, p. 810). A midwife who had inverted and prolapsed the uterus in her efforts to drag out the placenta seized a bread-knife and cut off the bleeding tumor which protruded from the vagina, believing it to be a polypoid growth of some kind.

* I can not too warmly thank my good friends, Drs. E. S. Lewis, of New Orleans, and James R. Chadwick, of Boston, for having kindly placed in my hands the valuable publications of Dubourg and Sauter, which have given me many pleasant hours and an impetus to further study in this direction, so that I am now in a position to present the historical features of this operation, the practical side of which I have endeavored to lay before the profession in my paper on Vaginal Hysterectomy.

Wrisberg reasoned that if a prolapsed puerperal uterus could be removed without danger to life or injury to health the prolapsed non-puerperal uterus could likewise be removed, and he proposed amputation of the prolapsed cancerous uterus but did not venture to carry out his suggestion.

Though it be true, as Baudelocque claims in 1803, that Lauvariol suggested the operation about 1783, or as Lazari claims (*Medico-Chirurgical Journal*, of Parma, 1812) that the priority belongs to his countryman, Monteggio, it was the publication of Wrisberg which first bore fruit; inspired by his ideas, Osiander took up this line of thought in 1793, teaching the operation, which he for the first time actually performed in May, 1801, though he did not publish until his ninth successful case, in 1808, having in one instance performed the operation a second time upon the same patient on account of a recurrence after three years.

Attention was now directed to the subject of amputation or excision of the uterus, extirpation as it was then called, and cases in point were more frequently recorded.

The midwife still continued her work, and in Siebold's *Lucina* (vol. i, No. 3, p. 401) we find the complete description of a case occurring in Switzerland, in which the attendants were surprised by the descent of a large tumor, and as it could not be removed by traction, the article states, "the boldest of the fool women present seized a razor and cut it off"; ice checked the hæmorrhage, rest and Nature completed the cure, which was perfect, only an incontinence of urine remaining.

Physicians taking note of the success of the procedure resorted to amputation where reposition was impossible—thus the case of Hunter in Duncan's *Annals of Medicine* (1799, vol. vi), and of Joseph Clark (*Journal de médecine*, 1805, vol. ix); but as a method for the treatment of irreducible inversion amputation has not been revived, though recently extirpation has again been advocated for the relief of prolapse.

As a surgical procedure for the removal of the cancerous uterus, the question was now before the medical world, and in 1810 the Royal and Imperial Academy of Vienna offered a prize for the most satisfactory solution of the problem, demanding an answer to a series of carefully prepared questions, thoroughly covering the subject of uterine cancer and its surgical treatment, which would do credit to any scientific body at the present day.

They may be well recalled as extremely suggestive even at the

present time. The first two refer to malignant disease in any part of the body :

1. Under what conditions may we expect permanent relief from the removal of a malignant growth ?
2. Is the removal of a malignant growth advisable, even though a cure is not reasonably to be expected and the general condition of the patient may even be aggravated ?
3. Is the extirpation of the carcinomatous non-prolapsed uterus to be considered as one of the duties of the surgeon ?
4. If so, what is the best method, how is it to be done, what special precautions are necessary, what are the dangers and how are they to be guarded against ?
5. What cases, considering location and extent of the disease, are to be operated upon ?
6. Can a satisfactory diagnosis be made in the individual case as to the feasibility and successful issue of the operation ?
7. Is the cure complete with the successful issue of the operation and healing of the incision, or are further therapeutic measures indicated ?

The fact that the prolapsed puerperal uterus could be safely removed had been amply demonstrated and Osiander had shown that the non-prolapsed uterus could be brought down within reach of the surgeon's knife and its cancerous portion removed, but would this secure against return of the disease ? In case of a malignant growth in breast or testicle the entire organ was removed, but while it would appear that complete extirpation of the cancerous uterus alone could secure immunity, was this feasible or even justifiable ? the practical solution of the problem involved too serious, too desperate and novel an operation to be undertaken by even a bold surgeon without some justification, and this was given by the questions propounded by the Vienna Academy, a power in medicine.

Yet it was some time before the operator ventured beyond a high amputation, prolapse of the intestines and the opening of the abdominal cavity were feared and stood in the way of complete removal.

Langenbeck (Langenbeck's *Neue Biblioth.*, 1813, ii, p. 672), approximated total extirpation in a favorable case, one of complete prolapse, removing the cancerous uterus and appendages by very high amputation, leaving merely a thin layer of uterine tissue underneath the peritoneal covering of the fundus.

The final step was taken by Sauter (Constanz, 1822), who successfully removed the entire organ *in situ* without the use of ligatures ;

the patient survived the operation, was relieved of suffering, for a short time was able to do her own work but died six months later, without any evidence of relapse, from indistinct bronchial and intestinal troubles.

Sauter published quite a little volume fully describing this case and seeking to answer the questions of the Vienna Academy. He shows that extirpation of the cancerous uterus is feasible, an operation which can be safely and successfully performed and which the surgeon is in duty bound to resort to for the relief of suffering woman-kind. The method was practically the same as that now adopted, as near as it could be without speculum, ligature or pressure forceps, but knife and scissors were kept close to the uterus in order to avoid larger vessels. Loss of blood was slight, but one small vessel spurted and this readily controlled by pressure with fingers; styptics, sponge and lint for tamponade were on hand, but not needed; the uterus could not be drawn down, as the polypus forceps would not hold in the friable tissue of the cancerous cervix, so the organ was pressed down by the hand of an assistant, who also sought to press the intestine upward.

The reasons given for the operation and for every step in it are such as might be expected from the scientific surgeon of to-day: The sufferings of the patient were unbearable, she clamored for relief or death, but she was beyond help by medication, the knife alone was in question. Operation was still possible, because the infiltration did not extend to the vaginal walls or the ligaments and tissues surrounding the uterus; but the only operation so far performed, the so-called extirpation, the amputation of Osiander, would be useless, as the disease already extended beyond the cervix toward the fundus; removal of the entire organ afforded the only possible hope. Thus reasoned the brainy, high-minded village surgeon, and the wretched sufferer gratefully took the slender chances of the desperate operation he was willing to undertake for the first time. Though a cure was not effected, she was relieved from suffering, temporarily restored and died an easier death, the probable result of an operation at so late a stage, when the cervix was already destroyed and the body of the uterus invaded; the operation was justified if not absolutely indicated.

Sauter laments the impossibility of earlier operation, which he advocates, and laments and condemns the ignorance and narrow-mindedness of the "mere prescription-writing physician," who fails to recognize the disease and seeks cure by medication, until the condi-

tion of the patient is such that relief at any price is sought, but she is beyond the possibility of surgical help.

Have conditions changed much?

Sauter believes himself to be the first to have performed this operation and so does Dubourg who, in 1829, successfully removed the entire cancerous uterus at Auteuil, near Paris, and at a later date operated in New Orleans, as described in his little memoir on the *Extirpation of the Uterus* (New Orleans, 1846), a very thorough little work and remarkably like the preceding one of Sauter, covering the entire ground, urging the operation as one from which the surgeon skilled in the use of the knife must not shrink.

The various steps of the operation are like unto those of the present, as we may see from his *résumé*: "First, an incision with the bistoury upon the tense vesical wall of the vagina. Second, a dissection around the neck with scissors for about one half the circumference of the vagina. Third, the application of the double tenaculum to the fundus; the passing of the fingers to the rear and turning forward of the uterus, making it appear outside with its ligaments, then ligation and dissection complete the extraction, resting the entire uterus on the vulva; exploring the posterior wall of the vagina in order to remove a more or less large flap in accordance with the extent of the infiltration." Let me call especial attention to the manner in which he emphasizes this latter step, which he deems as important as the searching for each single glandule which may be found in the amputation of a cancerous breast. Other equally good points are made which have been looked upon as results of comparatively recent experience. So Sauter notes the disease of the kidneys caused by pressure upon the ureter, either by an enlarged uterus or a pelvic deposit, not as a contra-indication like other lesions of the kidney but rather a point in favor of operation.

In 1829 extirpation of the cancerous uterus had been successfully performed in France and Germany, the method had been practically perfected and these operations had been fully described in medical publications; but the era for such bold procedure had not yet come, the surgical mind was not yet prepared to grasp such apparent extremes nor was the public prepared to accept such measures.

Dubourg, who tells us that in 1846, to his knowledge, the operation had been performed some thirty times, says that it has met with opposition "as malicious and false as that which was raised against Ambroise Paré and his ligation of arteries. The entire herd of medicos incrustated by routine, the mass of intriguers who speculate

upon their science, sought to advertise themselves and to cast ignominy upon this great man; and if Ambroise Paré, this physician of four Kings, was vilified for seeking to replace the cruel methods of checking hæmorrhage, by burning the wound with red-hot iron or boiling wax, should he complain if he be persecuted for practicing this noble operation?"

He truly says that it must be a cowardly surgeon who will listen to the cry of the public, who are unfit to judge, or to the malignity of his brethren, who are always ready to defame him. It can only be a surgeon who is a poor friend to his patient who will hesitate to aid woman to escape the horrible torments of that disease, by every means science can suggest, even at the risk of his own reputation; and he truly prophesies that in time the extirpation of the uterus will prove useful to a large class of invalids.

"When this operation," he adds, "appears less terrible it will be decided upon before woman is weakened by hæmorrhages, by suffering or cachexia; the chances will then be more favorable, by reason of a less vitiated constitution.

"It will be more useful when operative methods have been perfected, and we will operate with greater skill because even the failures are instructive. The only real contra-indication is the cancerous cachexia or the ravages of disease upon the parts to be operated upon." Notwithstanding the success of isolated operators here and there, notwithstanding the success achieved by the now practically perfected operation, it fell into oblivion. It had been brought fairly and fully before the profession in all its phases, described in the lecture-room, in medical journals, in separate publications and even in text-books.

E. von Siebold's *Diseases of Women* (vol. iv, p. 500) describes the methods of Oslander—high amputation with cauterization, high amputation of the cervix, excision with packing of the cavity with styptics and complete extirpation by vaginal hysterectomy. Yet this pioneer of the capital operations was doomed to oblivion; it was premature. Possibly it may have been public prejudice which swayed the surgeon, but certain it is that we hear nothing more of the operation until revived after the undoubted success, and the acceptance by the public, of ovariectomy, which was actually a contemporary operation; vaginal hysterectomy the European, and ovariectomy the American sister. In their first years, during the first quarter of this century, the fate of both was the same. Both were too far in advance of their time; neither the profession nor the public were ripe for such

procedures, to which we must be led by the slow process of progressive development.

Hysterectomy completely died out, while ovariectomy lingered along. Our own great McDowell battled in vain against the prejudices of the times, and in vain, as it seemed at the time, was his work which has since proved so great a boon to humanity.

The work of the Atlees saved ovariectomy from the death of its fellow, but no Atlee appeared for hysterectomy; none were bold enough to continue the work of hysterectomy in the face of the attacks made and the abuse heaped upon this operation as it was upon ovariectomy, be it by ignorance or jealousy on the part of the profession or by prejudice on the part of the public.

We must remember, too, that it was a brave woman only who would face the trials of this time-consuming operation without anæsthesia, and woman must be ever grateful to her brave sister of that day who for the first time faced this danger.

Ovariectomy, which had barely survived, not under the fostering care of the great hospitals and the teachers of surgery but at the hands of the country surgeon, received a certain impetus with the discovery of anæsthesia, and was rapidly perfected with the advent of the antiseptic era. When this had been thoroughly established as an operative procedure and its methods perfected, the surgical treatment of the diseased but non-enlarged ovary was the next step. Then the attention of the surgeon was directed to the uterus itself, and Freund's operation was the first step in this direction—the removal of the uterus and, of course, by abdominal section, which had proved so successful in operations upon the ovaries, but the results were almost invariably fatal. This was in the seventies, in the very home of Osiander, hardly more than half a century since the cancerous uterus had again and again been successfully removed *per vaginam*, while by the new method death was almost inevitable.

The work of Freund found imitators here and there, but almost always with the same result, and a lull followed.

Extirpation of the uterus by abdominal section was a failure, and the numerous fatal results caused a temporary halt; the attempt had been made in the wrong direction, under the impulse of the dominating idea of the period, the success of ovariectomy by abdominal incision.

Freund's operation is an admirable example of the prevalence of fashions, as it were, even in surgery. The removal of the ovary by laparotomy had proved unexpectedly successful, but as yet the knife

had penetrated no farther into the abdominal cavity ; it had not ventured beyond the ovary and laparotomy was synonymous with ovariectomy. Ovariectomy led to hysterectomy. The success of abdominal surgery in operations on the one organ naturally promised well for the other, and not until continued fatal results had proved this method an impossibility was this line of attack abandoned ; then we returned to follow in precisely the same course which had been taken four-score years before ; from the high amputation of Schröder to total extirpation was an easy step. Hysterectomy *per vaginam* was the natural sequence to the high amputation and at once proved successful. Thus the operation had been rediscovered, as it were, or had been again reached in the natural sequence of surgical progress.

Again, in this reappearance of the operation we see the gradual development step by step ; while in the earlier period extirpation had been more rapidly reached, through amputation of the prolapsed parturient uterus, the prolapsed and then the non-prolapsed cancerous organ ; in the recent period of the reappearance of the operation, amputation of the cervix, high amputation with conical excision, led to complete extirpation after the failure of the attempts induced by the prevailing interest in laparotomy. Freund's operation is a conclusive proof of how completely the work of earlier surgeons had been lost, and the fatal results of hysterectomy by this method would naturally suggest the thought whether many a life might not have been saved by a little research, whether untold anxiety and suffering on the part of the patient and worry and disappointment on the part of the physician would not have been prevented by a glance at the work of the previous generation, by the study of the surgery of earlier days.

Hysterectomy, with anæsthesia and antisepsis, with speculum and pressure-forceps, in this era of popular and successful surgery, was far more easy for the surgeon. And yet the new operation in the early eighties was of comparatively slow growth, because it was approached with some doubt by reason of the serious results which had followed extirpation of the uterus by abdominal section.

Comparatively favorable results, a comparatively low mortality, ere long firmly established vaginal hysterectomy as one of the accepted procedures in surgery for the removal of the cancerous uterus. The operation is not distinctly referable to any one surgeon but seems to have gradually grown in the well-prepared soil, and certainly now it was timely and in proper season.

The only difference between the modern method and the old was

the speculum and the ligature, which greatly facilitated the work of the surgeon, while antiseptics removed the most serious dangers and anæsthesia many difficulties; and now that extirpation of the cancerous uterus had been rendered a comparatively safe and simple procedure, it was Péan, its staunchest friend, who extended the vaginal method to other than malignant diseases.

The natural sequence was the application of the operation to other dangerous and incurable diseases confined to this organ, to benign neoplasms and inflammations; and within the last decade this operation has been developed and has attained a degree of perfection which is astonishing, even in view of the triumphs accomplished by antiseptic surgery in all directions at the present day.*

Thus vaginal hysterectomy has been extended in its application from the removal of the cancerous uterus to the removal of the non-malignant, whether diseased or tumefied organ, and this is the advance of the present over the past, but even this had been distinctly suggested; thus Sauter says that "the conditions which necessitate total extirpation are malignant disease and, perhaps, *other morbid conditions confined to the uterus*, localized and proved incurable, which cause great suffering or undermine health, if they *do not threaten* the life of the patient."

Though we have but little time and less leisure for historical research in this progressive and practical age, so firmly are we impressed with the pleasant sense of the superiority and perfection of this period, this little retrospect touches upon so much that is of interest that we may well give it a more than passing thought. First of all, we can trace the development of this operation step by step, with every link in the chain complete, clearly demonstrating the course of medical progress and throwing light upon seeming discoveries, the steps to which are less apparent.

Then, again, the development of this one operation is so fully portrayed that it presents among its many points of interest a comparison between the surgery and surgeons of the past and the present, between methods old and new, revealing striking contrasts and yet striking similes as well, notwithstanding the difference of conditions and circumstances in all phases of life. In fact we find much that has re-

* I shall not here enter upon the various claims of priority for hysterectomy in connection with disease of the appendages, pelvic suppuration and uterine fibroids. This pertains to the history of the day, to the surgery of this decade, and may be found in my paper on Vaginal Hysterectomy for Suppurative Disease of the Appendages, *Trans. Southern Surg. and Gyn. Soc.*, 1893.

cently been claimed as new discussed, if not practiced, by the conscientious and observing surgeon of that day.

This operation was proposed at an early day (1793, 1787), and yet, notwithstanding the clear demonstration of its feasibility, by the successful removal of the puerperal uterus, it was not attempted until years later (1801), nor was the pen rashly wielded.

Osiander did not publish until he had operated upon his ninth case, 1808, seven years after his first attempt. Langenbeck, who operated in 1813, did not publish until 1817; the same mature deliberation characterized the work of our own McDowell. Dubourg published in 1846, in New Orleans, his work in Auteuil of seventeen years before, though briefly described at the time.

The interesting little work of Sauter on *Complete Extirpation of the Carcinomatous Uterus* (Constanz, 1822), an admirable exponent of the best medical thought of that day, is dedicated to "the operating medico who has been and will yet be interested in hysterectomy, to Osiander, and to woman and her heroism, the inspiration to this work."

He touches upon many points which we have looked upon as among the more important of recent acquisitions. He applies this operation not alone to cancer but also to *other* not otherwise controllable diseases confined to the uterus, which undermine the constitution of the patient; and in discussing the question of complete extirpation or high amputation as practiced by Dupuytren and Osiander, he gives preference to extirpation because, as he rightly says, though the cancer may appear to be confined to the cervix, we can not tell how far the infiltration has already extended; and he even believes total extirpation to be preferable to high amputation in the early period, when the cervix alone is involved, as there is less danger of hæmorrhage and greater certainty of success. The main contra-indication is the evidence of cancerous infiltration in any of the tissues surrounding the uterus, be this ever so slight, then cachexia and serious lesions of any vital organ. But we must remember Sauter calls special attention to the fact that we must except certain renal lesions which are produced by pressure upon the ureter and, on the contrary, call for the operation, which affords the only assurance of cure. He urges early operation, before the vitality of the patient has been sapped and her recuperative power diminished, and loudly blames the mere "prescription-writing physician" for toying with medication and not heeding or not recognizing the deadly enemy until the sufferer is beyond the surgeon's help. Judicious observation is evi-

denced by Sauter's preference for total extirpation, as more likely to remove every vestige of disease, and Dubourg's advice for complete removal of all visible infiltration in the uterus and about it as equally important with the removal of infiltrated glands in the operation for mammary cancer.

If I have again recalled some of the views expressed, it is to emphasize the correct opinions held in those early days—opinions which were too far in advance of the general knowledge of that time, so that they were ignored and forgotten, to be again reached in the development of a more advanced era.

All the various methods of the present day for the drawing down of the uterus were resorted to; Osiander used the ligature passing through the uterine body, and when this tore out he used a calculus forceps; the volsellum forceps were used by Dubourg; the toothed polypus forceps by Wenzel; Struve even invented an instrument to be inserted into the uterine cavity for pulling down and controlling the position of the part.

Extirpation by the *combined vagino-abdominal method* was likewise proposed. Guterblatt (Sieboldt's *Obstetrical Journal*, vol. i, part 2, p. 228) describes the opening of the abdomen and the liberation of the uterus from its connection from above by *cutting downward upon an instrument* devised by himself, which was *inserted through the vagina* and served to press up the parts and guide the knife, apparently identical with one of the new instruments of the present day used in this supposedly new method of operation.

Even the erratic procedures of an ingenious operator whose method is scarcely believed a possibility by the wondering surgeons of this era of simple and rapid hæmostasis, vaginal extirpation without ligature or pressure forceps, in fact supposed to be a myth by many, is purely and simply the operation of 1822, a return to the early days.*

The operations were successful and remarkably well performed if we consider the exceedingly unfavorable conditions existing, a neces-

* March 16, 1895. This paper was written in the fall of 1894, before serious consideration had been given to the operation without ligature or pressure forceps, and the possibility of such a procedure was doubted, but within the last months the "peeling" out of the uterus has been advocated in some of our journals, and this operation, once a necessity, is now placed before us as the most advanced of surgical procedures. The work of earlier surgeons seems to have been completely unknown or ignored, but these methods, highly creditable in the first quarter of the century, must now be termed bad surgery.

sarily tardy operation, the patient weakened by suffering and discharge. Opinions were antagonistic, "the surgeon had to face the vigilant jealousy of his brethren and the curses of a justly terrified public," and the death of the patient was likely to be accounted murder; brave men they were who faced such dangers and sought to give relief in the far advanced cases which alone came for operation. The prognosis is remarkable if we consider the period; the reasons given by Dubourg for operation are that the woman has no other resource and that she will sacrifice, to the hope of health and to relief from suffering, at worst only a very short period of a wretched life. Nor does Sauter expect more from operation in the advanced stage; he looks for the death of a patient at an earlier day than without extirpation, even though this prove successful and she does not die on the table; he rightly believed that the brief span of life would be more bearable and death more rapid and easy. The technical difficulties of this operation were also much greater, without speculum or pressure forceps, without anæsthesia or antisepsis. The parts were comparatively inaccessible unless drawn down; hence the ligature was rarely used. A tampon of lint or punk with styptics served to control hæmorrhage, which never proved alarming.

Sauter looked upon the ligature as impossible and hence did not use it; the one essential point in which he is not up to date; * while Dubourg did not deem it essential but applied it when necessary after the partial liberation and bringing down of the organ; in his first case one single vessel was tied and a great deal of blood was not lost; in these extirpations of the uterus without the use of the ligature the amount was estimated at from one half to one and one half pounds. The time occupied in the first operation of Sauter was forty-five minutes; but with this experience he believes that fifteen minutes will suffice for the next. Dubourg required twenty-five minutes, but a Spanish surgeon kept his patient on the table for three hours.

The discussions are much the same as those which we have passed through in the past decade before the complete acceptance of the operation. First came the question as to the advisability of the operation, under the theory that cancer was a constitutional not a local disease. Then as to the probability of a cure, even though all the diseased part be removed, and whether amputation or complete extirpation was preferable when the disease was limited to the lower part of the cervix.

* March 16, 1895. This method, the peeling out process, has lately been placed before the profession as the most recent modification of the operation.

The possible danger to the system from removal of the uterus is so well treated by Dubourg that I cite his own words. He says: "The uterus has neither organic value nor reaction before puberty nor after the change of life, which comes sooner or later; the operation brings it about immediately. A woman who has suffered extirpation of the uterus can be compared to one who has passed the menopause, because, in the first case, she is deprived of the organ and, in the second, of its function only. In both cases her constitution no longer receives the stimulus, hence there is no contra-indication from any reaction which may be caused by the properties or influence of the uterus in a case in which the life of the woman is in question."

Prejudices and jealousies undoubtedly influenced many of the views expressed: Osiander was attacked on all sides; Wachter, a Dutch obstetrician, believes that Osiander's successful cases were not cancer but some benign neoplasm, while those which were malignant died rapidly after a more or less prolonged period of immunity.

Wenzel (1816) in his book on *Diseases of the Uterus* believes that no good could come from the amputations of Osiander, as part of the infiltrated organ remains, and that patients so cured for a time die more rapidly after the inevitable reappearance of the disease. He says that complete extirpation alone can offer hopes of relief. In fact, various writers express the opinion that hysterectomy proper must be resorted to if any operation is to be attempted, while others claim that amputation may cure.

Dupuytren (*Bib. Med.*, February, 1815) tells us that of his seven cases of amputation or extirpation of the neck, one has returned in eighteen months; one in two years; and another was well after four years; and this holds good at the present day for the average case which is already far advanced and in which extirpation is really indicated.

The numerous claims for priority are indicative of the imperfect dissemination of medical literature. Langenbeck, who first operated five years after the publication of Osiander, does not mention him with a word; Italians and French claim the operation as well as Germans; Baudelocque in 1803 expresses his doubts as to the method and says that it was suggested twenty years before in the Chirurgical Academy by Lauvarioli, and Lazari in the *Medico-Chirurgical Journal*, of Parma (1812), claims the priority of the suggestion for Monteggia.

Sauter says, and from all I can gather I believe this to be true, that he is the first who extirpated, completely removed, the cancerous uterus when not prolapsed (1822). This same claim is made by Du-

bourg for his operation performed in 1829, and it seems, justly as far as France is concerned, as the famous *Dictionary of Medicine* of Breschet (1822) says, that this operation is impracticable and impossible. The public press and the medical journals of the country certainly give him the credit he claims, and the interest which his operation aroused may well be appreciated when I say that the secular press of the day proclaimed his success, a most unusual proceeding at that period.

It is unnecessary to cite the various opinions. The fact is that the amputations of Osiander, the *extirpatio colli* of Dupuytren, had been fairly successful and had led to complete extirpation, as successfully performed and fully described in 1822, and some surgeons, though few they may be, occupied almost precisely the same ground which the advanced surgery of the present day has taken after the experience of the past decades. Sauter urges vaginal hysterectomy in cases of uterine cancer, unless the neighboring tissues, ligaments or vaginal walls show evidences of infiltration, and such infiltration of the surrounding tissue he points out as the one contra-indication, in addition to cachexia and constitutional disease.

If the disease is limited to a small part of the organ the indications for the operation are positive, he says; if it is more advanced, they are dubious; if extending to neighboring tissues, contra-indicated.

If the indication is a dubious one, it is the duty of the surgeon to operate, to give the patient the one chance for life. Amputation he believes less certain, claiming that what is true of other organs is true of the uterus: that if any part is thus diseased it is better to completely remove the whole, and he urges hysterectomy in place of amputation, even if the disease be limited to the lower part of the cervix, claiming that the danger is no greater and the hæmorrhage even less in total extirpation than it is in partial amputation.

As to the malignant disease itself, he clearly expresses that view, which now is most general, and upon this he bases his plea for early operation. He says: "It seems as if Nature for a time held the dread enemy imprisoned, to give us time to exterminate him ere he broke forth in every direction in his destructiveness. Death is certain without operation and late operation useless."

So clearly and fully have the indications been given, so minutely has the operation been described, so fully discussed, and yet it fell upon barren soil. The spirit of the period was not sufficiently advanced and complete oblivion followed.

With so thorough a preparation, so complete a paving of the way, that faulty and fatal misstep in the progress of gynæcological surgery, abdominal hysterectomy, might well have been avoided, had the authors and operators of earlier days received the attention which is due them.

DOES LACERATION THROUGH THE SPHINCTER ANI EVER OCCUR IN THE MEDIAN LINE? SEVENTEEN CASES OF LATERAL INJURY.*

BY ROBERT L. DICKINSON, M. D.,

Lecturer on Obstetrics and Assistant Obstetrician to Long Island College Hospital ;
Obstetrician to Kings County Hospital.

Synopsis.—*In seventeen cases of sphincter injury seen soon after labor no laceration in the median line was found, and but two near that point.†*

In nine of the cases the tear of the external sphincter occurred from seventy to ninety degrees from the median line.

In thirteen of the cases the anterior end of the torn muscle was rooted out of its fascia and hung bare, while the sheath presented a well-defined pocket or pit.

In late secondary operations the lateral character of the injury is difficult to detect.

There are anatomical reasons for laceration at this point under the conditions found during maximum distention.

Since the time, in February, 1887, when a striking case of recent lateral injury to the anal sphincter drew his attention to the matter, the writer has looked in vain for a case of laceration in the median line. The cases seen within one or two weeks of delivery—with a few exceptions whereof the notes were lost—have been carefully noted and sketched, and are here reported. In all, œdema or rigidity of the pelvic floor or violence during delivery explained the injury.

Reasons for the Lateral Character of the Injury.—Let me draw attention to the diagram (Fig. 1) in order to see whether we can point to

* Read before the Obstetrical Section of the Academy of Medicine, February, 1895.

† One case has been seen since the paper was presented and added to it, and two since seen are not included.

any conditions which would explain how it is that the central line is not the one in which injury occurs. It is to be noted that in the middle line the perinæum is the point of junction for the following muscles: The bulbo-cavernosus or sphincter vaginæ, the two transversus perinæi (superficial and deep), the sphincter ani, and some of the fibers of the levator. These interweave in such a manner as to

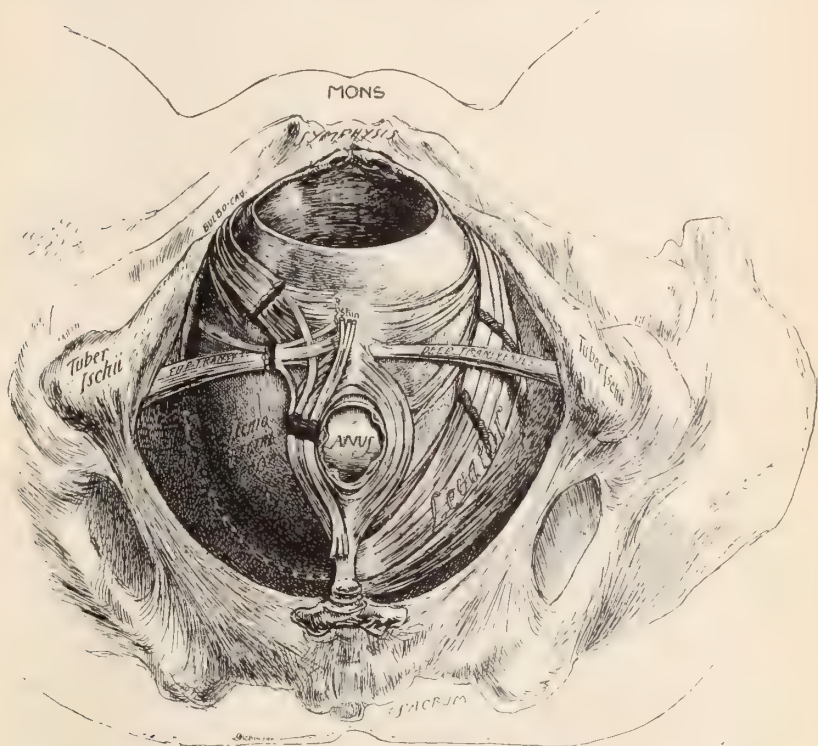


FIG. 1.—A diagram of the muscles of the pelvic floor during labor when the occiput is emerging from the vulva, as seen when looking at the pelvic outlet. The fibers of the sphincter running into the skin are shown, as well as its interweaving with the other muscles in front, and the fact that the gaping of the anus is insufficient to tear the muscle. This shows that the sphincter is unsupported laterally and that the other muscles usually give way also at unsupported points. About half life size.

make a mesh- or net-work, which, with the tendinous and fascial junctions, constitute a strong resisting structure. But it will be seen that at a short distance from this central point the guys which run toward this point to form a web of muscular bundles and fascial over-

lappings, are not supported by any interweaving, but show between them considerable spaces that are filled by fat and connective tissue. It is natural to suppose, therefore, that the yielding would occur at such unsupported points, as noted on the diagram, Fig. 1; and in practice this was found to be so. We already knew that median longitudinal injuries of the posterior vaginal wall or of the fossa navicularis were rare, and that the lateral vaginal sulcus was the point of election of injury. (Dr. Reynolds' study, *Trans. American Gynecological Society*, 1891.)

Another factor in lateral injury of the external sphincter may be this: The muscle is anchored posteriorly on the coccyx; as the head distends the pelvic floor, it pushes the anus before it until the space between the coccyx and the center of the perineal body, to which the anterior end of the sphincter is made fast, is greatly elongated, and the muscle is distended in a longitudinal direction between the points of origin and insertion from an original length of about three inches to one of five or six inches (7.5 cm. to 15 cm.). Where should it give way if not laterally? The circular distention is not great, for, as the head slips out, the anus gapes but an inch. The strain must be longitudinal, and therefore the tear must be lateral, at right angles to the pull. Inasmuch as few fibers decussate or form an encircling ring, but the muscle is made up of two muscles with a tendinous median junction before and behind the anus, since tendon usually yields before muscular tissue does, and since the point of union of a muscle and its tendon is more likely to give way than the body of the muscle itself, the sphincter is somewhat peculiar in its action, if my cases represent the general rule.

It will be noted also that in almost all these cases one of the transversus perinæi muscles has parted, and in no case has the tendinous junction of the muscles in the median line given way. The levator injuries are in the body of the muscle also.

The vaginal laceration and the anal injury may be on different sides (three cases). Of sixteen cases, ten were on the right side, six on the left side, but among these last is one involving both sides of the external sphincter. The right or left position of the occiput seems to bear no special relation to the side which gives way.

Method of Repair.—Two buried catgut sutures carried through the free hanging end of the muscle and then down into the pit to catch the hidden end, draw the torn parts into accurate apposition. The rest of the injury is then repaired as usual, taking care that one of the external silkworm sutures supplements the catgut in the

sphincter. Loose action of the bowels on the third day with exact support of the torn structures, insures a minimum strain on the injury.

I have reproduced diagrammatically the conditions found in most of these cases. It is impossible to give an absolutely faithful picture because the flow of blood and the red color of the torn tissues render a good photograph well-nigh impossible, and the pulpy and shifting and bleeding condition of the parts would defeat any attempt to take paraffin casts of the fresh injury. I have had to depend upon rapid sketches and have here reproduced some of them. The diagrams showing a series of sphincters represent a variety of drawings of the muscle as shown in different text-books. The outline drawings of the perineal body in antero-posterior section simply furnish a graphic method of comparison of the injuries with each other.

It is certainly difficult to understand how it is that since I have been looking for fresh injuries of the sphincter, I have found no case in which the muscle had parted in the median line, and but one in which the muscle was injured near that point, and yet in looking over photographs and sketches of lacerations that had not been repaired, and which had completely covered themselves by granulation healing, one does not often find that the pits which represent the ends of the torn sphincter fastened to the scar tissue are at very different levels. One would imagine that when the muscle gave way at a point between the anus and the tuberosity the two ends would retract somewhat equally and that months or years later a distinctly lopsided muscle would be found; for the anatomists tell us that the sphincter ani is made up of two distinct halves of an ellipse, one half on each side of the anus. In these cases of mine the lateral muscle (as it might be called) has given way, and the uninjured better half on the other side still has its attachment to the two tendons, one in front and one behind the anus, which constitute its origin and insertion.

How then does the injury assume so symmetrical an appearance, and above all, how can we produce such a good result by a secondary operation that practically takes little note of the asymmetry of the injury?

I can only offer the suggestion that the cases in which the injury is ninety degrees from the median line must be those in which the scar shows a difference in the height of the two pits, as in Figs. 2, 3; but it is possibly accounted for in part by the process Leopold has described and pictured in his last study of the repair operation, in

which he lays down the principle that in secondary perinæorrhaphy one's duty is to take the steps by which the wound has healed in reverse order, and so open it up as nearly as possible in its original condition. To show the steps of healing he pictures three cases at three



FIG. 2.

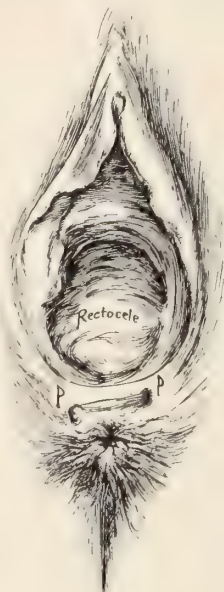


FIG. 3.

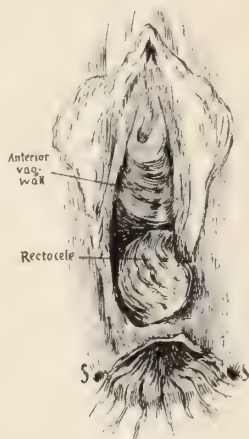


FIG. 4.

FIG. 2.—Photograph of an old case of complete laceration depicting the contact of the rectal and vaginal mucous membranes, and the asymmetry of the pits that mark the ends of the sphincter ani.

FIG. 3.—A sphincter which was probably not completely torn, with pits (*p*, *p*) that indicate the ends of the muscle.

FIG. 4.—Old complete tear (Leopold) showing clearly that the injury to the perineal body was mainly on the right side, but that the leveling process and the straightening of the sphincter have made the one-sided character of the injury no longer recognizable.

stages of granulation, which I here place side by side in Fig. 5. Underneath Fig. 5 will be seen diagrams, which show how, in Nature's process of covering in the wound, the mucous membranes of the rectum and vagina tend to approach each other, whereas the rest of the wound surface is drawn outward, presumably by the transversus perinæi and the torn sphincter ani. In this way the wound becomes longest in its transverse diameter as it heals, instead of its longitudinal or antero-posterior diameter, as it originally appeared. In this way the central tendon of the perinæum, carrying with it—off toward

the tuberosity—the shrunken and retracted end of my hanging tab of uprooted sphincter, and being free to move off sideways by the injury through the mass of the perineal body, might well carry this free end of the sphincter so far toward the lateral aspect of the anal canal as to make it appear almost level with its shorter fellow on the other

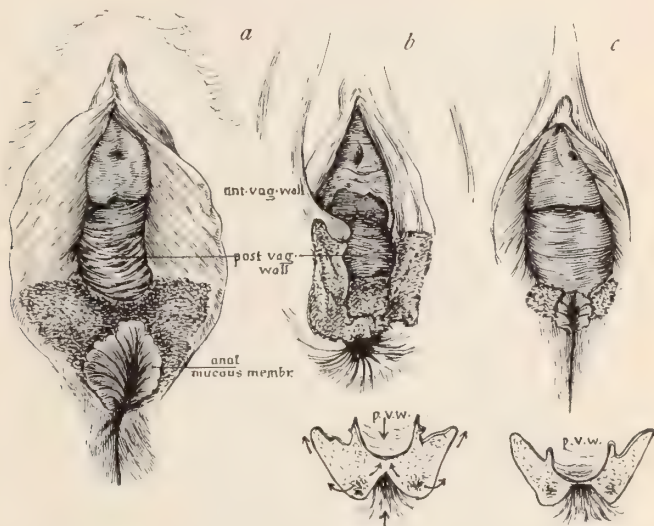


FIG. 5.—*a*, Complete laceration sixteen days after the injury (Leopold), showing the granulating surfaces and the way in which the posterior vaginal wall and the rectal mucous membrane are approaching each other; *b*, complete laceration; eighteen days post-partum (Leopold) showing an extensive injury in which the shrinkage is in the same general direction; the arrows in the diagram show the approximation of the posterior vaginal wall and the anal mucous membrane, while the sides of the wound are drawn outward; *c*, complete laceration six weeks after labor (Leopold) showing the further progress of the same process, whereby vaginal and rectal mucous membranes are brought together, while the sides of the wound have spread away from each other, as shown diagrammatically in the lower figure.

side. Moreover, in the absence of serious injury to the levator ani, the levator attempts to take on part of the guarding of the rectal contents, by drawing the ano-coccygeal portion of the pelvic floor forward toward the symphysis, and this process further tends to broaden out what is left of the sphincter into a muscle whose general shape becomes a transverse crescent or a bar, instead of an antero-posterior ellipse (see Figs. 6, 4)—and with ends rooted in the bridge of scar that stretches level across the pelvic floor where the perineal pyramid was.

The bearing of this limited study of fresh lacerations of the external sphincter upon the repair of old injuries is evident. It will be seen that it is not sufficient to make a simple denudation and unite it, and

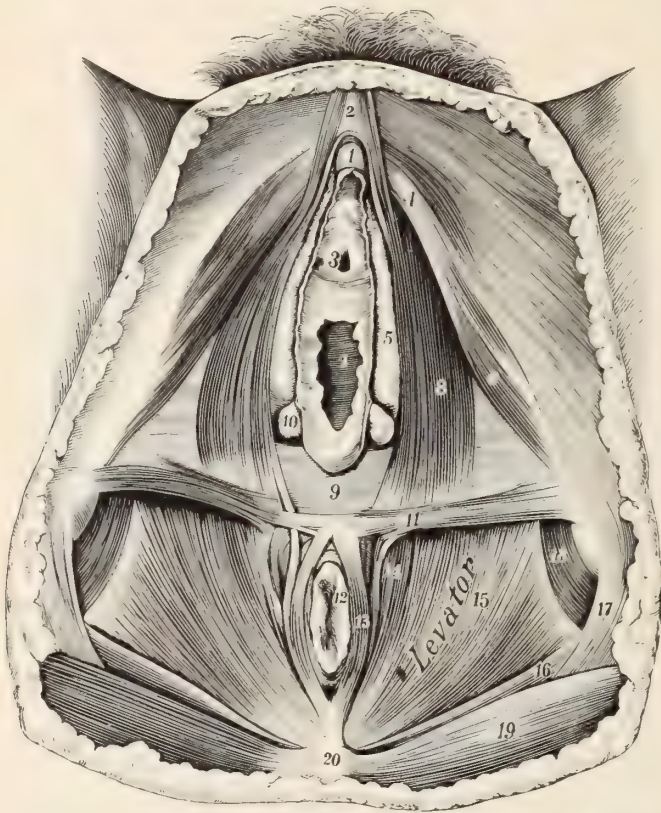


FIG. 6.—The muscles of the pelvic floor, and the relations of the sphincter and its fellows. Note the close union with the tendinous center of the perinæum and the interweaving with the transversus perinæi and the bulbo-cavernosus, also the lateral flattening of the anus and the tendon front and rear. 1, glans clitoridis ; 2, corpus clitoridis ; 3, meatus urinarius ; 4, tendon of ischio-cavernosus muscle ; 5, bulb ; 6, ischio-cavernosus muscle ; 7, vaginal entrance ; 8, sphincter vaginae or bulbo-cavernosus muscle ; 9, fossa navicularis ; 10, Bartholin's gland ; 11, superficial transversus perinæi muscle ; 12, anus ; 13, sphincter ani externus ; 14, 15, levator ani muscle ; 16, coccygeus muscle ; 17, great sacro-sciatic ligament ; 18, obturator internus muscle ; 19, glutæus maximus ; 20, os coccygis. (Modified from Breisky and Savage.)

that, if these seventeen cases are typical, and if the rule that they seem to point to be a general one—to wit, that almost all tears through the sphincter are at a considerable distance from the median line—it

will be necessary in secondary operations to study the topography carefully in order to ascertain at which side the muscle has parted, and in order to dig for the end that has withdrawn itself into its burrow. This is all the more necessary because of the shortening and atrophy that soon begins and which eventually may be very marked. The direction of the lower third of the scar will usually be a guide to the side on which we must hunt deepest for the hiding muscle ends. It is one of the possible advantages of the Saenger-Tait operation that the lower end of the lateral incisions can conveniently be extended with the finger, or the handle of the scalpel, with very little hæmorrhage, until the muscular fibers can be identified. In some of the old cases I have seen, a study of the external appearance without this dissection has demonstrated that simple inspection will not tell which is the side that has been most injured.

Anatomy.—Three muscles, according to Ellis and Ford, and MacAlister, surround the lower end of the intestines and are employed in diminishing its opening; a fourth elevates and constricts the gut:

- a. The sphincter ani internus.
- b. The sphincter ani externus.
- c. The corrugator cutis ani.
- d. The levator ani.

The External Anal Sphincter.—The external sphincter is a thin flat plane of muscular fibers, elliptical in shape and intimately adherent to the integument surrounding the margin of the anus. It measures about three or four inches in length from its anterior to its posterior extremity, being about an inch (2.5 cm.) in breadth opposite to the anus,* and over one third of an inch (8 to 10 mm.) thick.†

Its origins and insertions are as follows:

Origins.	<ol style="list-style-type: none"> 1. The skin in front of the coccyx. 2. The superficial fascia in front of the coccyx (the ano-coccygeal ligament, so called). 3. The tip and back of the coccyx. 4. A small cylindrical bundle encircles the anus.‡ 	Insertions.	<ol style="list-style-type: none"> 1. The skin of the perineal middle line. 2. The central tendon of the perinæum (deep fascia),* (decussating in part with their fellows).* † 3. The muscles: bulbo-cavernosus, transversus perinæi (superior and deep), and levator ani and accelerator urinæ.
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Allen says that the sphincter ani belongs to the skin layer of muscles, and in a strict sense can not have any important association with

* Gray, Ellis and Ford, Quain.

† Testut.

‡ MacAlister, Gray.

the skeleton, and Leidy, indeed, describes it as arising from the subcutaneous tissue at the end of the coccyx, but most anatomists agree in mooring it to the coccyx behind, and this bony attachment affords



FIG. 7.—Perpendicular section through the end of the rectal wall enlarged (Rüdinger); 1, mucous membrane of the rectum; 2, boundary between mucous membrane and skin of buttock; 3, fat; 4, levator ani; 5, sphincter ani externus; 9, fibers of longitudinal layer separating external sphincter into parts; 7, sphincter ani internus; 8, longitudinal fibers of muscular coat, which radiate outward at 9; 13, longitudinal fibers of muscularis mucosæ which radiate outward at 12; 11, circular fibers of muscular coat; 6, 10, and 14, slips of muscular fiber passing into tissue beyond.

a reason for the peculiarities of its rupture in labor. Like other sphincter muscles, it consists of two planes of muscular fibers which surround the margin of the anus and join in a commissure before and

behind (Gray), so that it may be said to be fixed in front and behind (Ellis and Ford) and to act as two separate lateral muscles, and not as a circular purse-string, as we are prone to imagine it, since the encircling fibers are few indeed. The two layers send fibers to each other, to the skin, and to the levator and other muscles (Morris *et al*), and laterally it joins the subcutaneous fatty layer by a rather wide slip (Ellis and Ford). It is very closely associated with the skin from which it is difficult to separate it, except in the most recent state

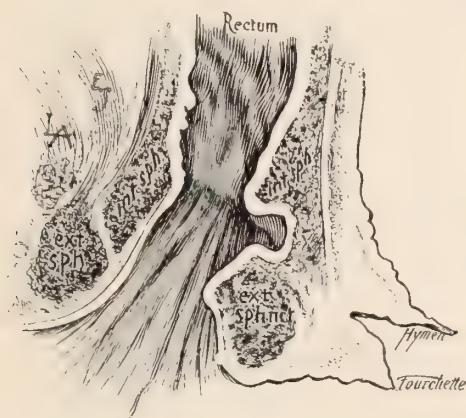


FIG. 8.

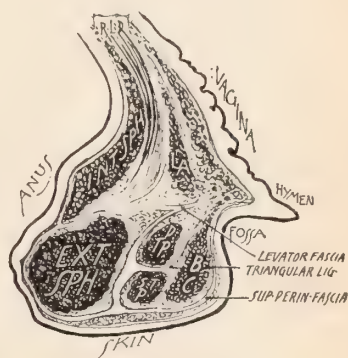


FIG. 9.

FIG. 8.—Antero-posterior section of the anus and perineal body, from Rüdinger's frozen section hardened in alcohol ($\frac{1}{1}$). The external sphincter is shown, as well as the internal, with a distinct pouch between. The longitudinal fibers outside of the circular fibers may be seen behind the rectum. The sphincter gapes after death, but the section with apparently gaping opening may merely represent the anus as a longitudinal slit with its lateral walls in contact.

FIG. 9.—Antero-posterior section of perineal body (not in the median line) to show muscles and fascia. Ext. sph., external sphincter. D T P, deep transverse perineal, and S T P, superficial perineal muscle. B C, bulbo-cavernosus, or sphincter vaginae. L A, the few fibers of the levator ani that run into the perineal pyramid.

(McClellan). It laps one fifth of an inch (5 to 6 mm.) on the internal sphincter (Testut).

Part of the muscular bundles of the external sphincter are pierced by radiating bands of the longitudinal layer of the muscular wall of the rectum, which become lost in the deep layers of the integument. Of these Rüdinger says: "The sphincter ani externus consists of two portions, an upper portion which is related topographically to the so-called levator ani, and a lower portion (see Fig. 7) in the arch around the internal sphincter in which the involuntary fibers of the

rectal muscle penetrate at fairly regular intervals. Between the individual muscle divisions are found clefts for the reception of longitudinal fibers. From these proceed single fibers between the clefts which penetrate to the external surface of the muscle. During their passage through the voluntary muscle these fibers become gradually more slender and after their exit unite with one another so that they form in the external sphincter unequal thick loops.

"There arise thus between the two kinds of muscle a fine and intricate reticulum (Figs. 7, 10) as a result of which, in their contraction, the muscles act on one another. When the longitudinal muscle of the rectum contracts, the entire lower portion of the external sphincter is drawn upward.

"The radiations of the fibers which after their exit from the bundles of the external sphincter become attached to connective tissue, fat, and external skin, represent mainly only the remnants of connective tissue which is found in the longitudinal layer of the rectum."

The Corrugator Cutis Ani.—Ellis and Ford describe the corrugator cutis ani, superficial to the external sphincter, as a thin stratum of involuntary muscular fibers. It is said by them to be constantly

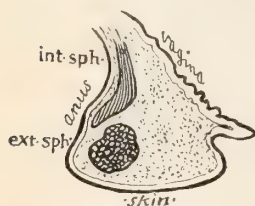


FIG. 9a.—Antero-posterior section of the perineal body to show the relation between the internal and external sphincter.

present. This subcutaneous layer extends around the anus. It begins rather externally to the external sphincter and the fibers converging enter the anus and end in the subcutaneous tissue inside the internal sphincter. It forms a thin layer around the anus, which is closely united to the skin, but this is not a continuous layer (MacAlister). When the fibers contract they corrugate the skin around the anus and throw it into lines radiating from the aperture.

The internal sphincter is a muscular ring about an inch in breadth, which surrounds the lower extremity of the rectum about an inch (or less, MacAlister) from the margin of the anus. The muscle is about two lines in thickness, and is formed by an aggregation of the involuntary circular fibers of the intestine. It is paler in color and less coarse in texture than the external sphincter (Gray). It is about one fourth of an inch in width at the surface (Ellis and Ford).

Rüdinger says that the involuntary muscle, the sphincter ani internus, is, like the external sphincter, subdivided by clefts into individual bundles and shows therein the processes of smooth muscle

fibers. The circular fiber layer is in no part of the rectum so well developed as in the end, where it forms the internal sphincter muscle. The fibers are in coarse bundles distinctly separated from each other; and between the groups are the continuations of the muscularis mucosæ, which at the end of the rectum is distinguished by considerable strength.

Kohlrausch speaks of a *sustentator tunicæ mucosæ*, of a supporter of the rectum, which is formed of vertically arranged fibers. From this layer, called by Henle the *muscularis mucosæ*, lamellæ proceed between the bundles of the internal sphincter, and after their exit they form sharply marked loops around the bundles of the internal sphincter. This relation of the muscularis mucosæ to the internal sphincter shows a dependence of the function of each on the other.

The vaginal (longitudinal) fibers descend outside the circular bundles of the internal sphincter and are lost in the connective tissues around the anus (MacAlister).

CASE I.—Mrs. W. This young primipara was a bleeder, and when seen in consultation was in a very bad general condition, with an occipito-posterior position in a good-sized pelvis. She had already lost much blood and the hæmorrhage was somewhat alarming until the head distended and plugged the outlet of the soft parts. Tarnier forceps applied nearly to the sides of the head and rather rapid extraction on account of the bleeding, are probably accountable for the tear. The child was born alive. The injury was entirely right-sided, running but a little way into the vagina down to the left of the median line, partly through the perineal body, and swerving sharply to the right of the anus so that the external sphincter was partly involved to one side of the median line.

Catgut and silkworm sutures gave good union.

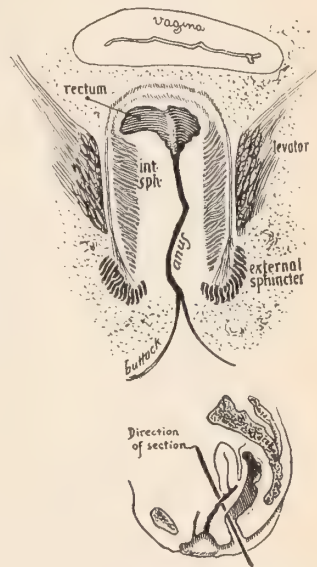
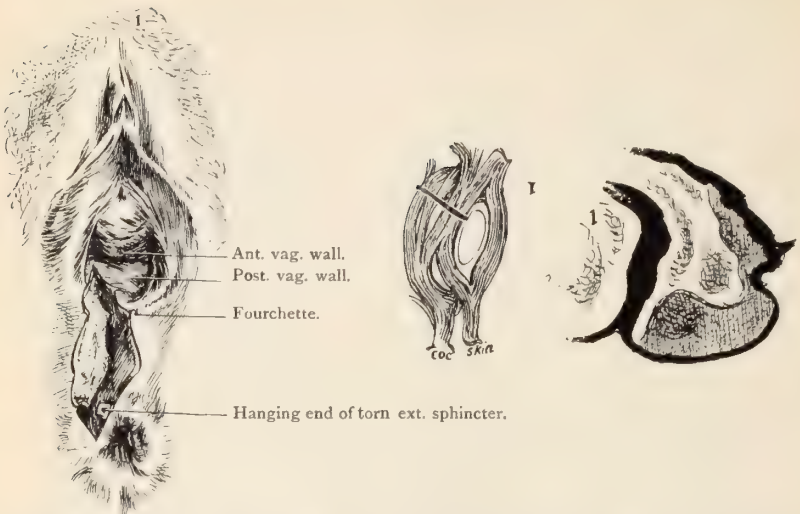


FIG. 10.—Section cutting through the two hip joints and the anus in the direction of the lower diagram. This divides the anus in its whole length and shows well its relation to the vagina above, the buttocks below, the internal and external sphincters, and the levator. It shows also that laterally where the tear usually occurs, the sphincter has no support except fat (Symington).

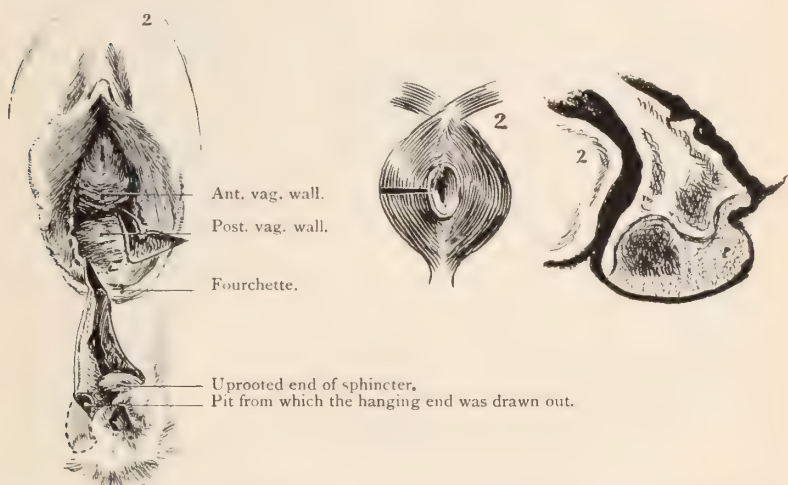


CASE I.—Lateral laceration of the pelvic floor and sphincter, with the sphincter drawn out of its sheath on one side. The diagram of the muscle alone shows the position in which the tear occurred as depicted in the dissected muscle, and the profile diagram of the perinæum explains the depth of the tear and the escape of the transversus perinæi. That the sphincter externus is made up of two muscles rather than of one, the two muscles being each half an ellipse, joining in front and behind, as is claimed by Berry Hart and Symington, may receive some additional force from their statement that the frozen sections studied with this idea will show the side walls of the anus in contact, and from Henle's familiar section said by him to represent the rectum, but by Symington to represent the lateral flattened anal canal.

CASE II.—Mrs. D., a primipara with a justo-minor pelvis and prominent ischial spines. A well-flexed head in the left occipito-posterior position was delivered after a twenty-hour labor by manually rotating the occiput to the front, and extraction with forceps. The vulva was very small, located far forward, and the pelvic floor was rigid; the occiput was held in the vulva twenty minutes. The right side began to give way by the time the occiput parted the labia, and before one usually begins to consider the question of episiotomy. Then the opposite side was freely incised and the head shelled out with great deliberation, removing the blades early—*i. e.*, as soon as pressure on the child's breech and extension of the head by pressure on its forehead could be trusted to keep the ground that had been gained. After delivery it was found that the left-side episiotomy incision had been torn upward to the spine of the ischium, while the tear on the right side which began at the hymen, a little way from the median line, had cut its way downward to the right of the anus,

involving the perineal body but very superficially, hardly touching the transversus perinæi, and severing about half of the external sphincter distinctly on the right side, with a well-marked tag of hanging muscle and a hole to fit it in.

The usual method of suturing yielded a perfect result.

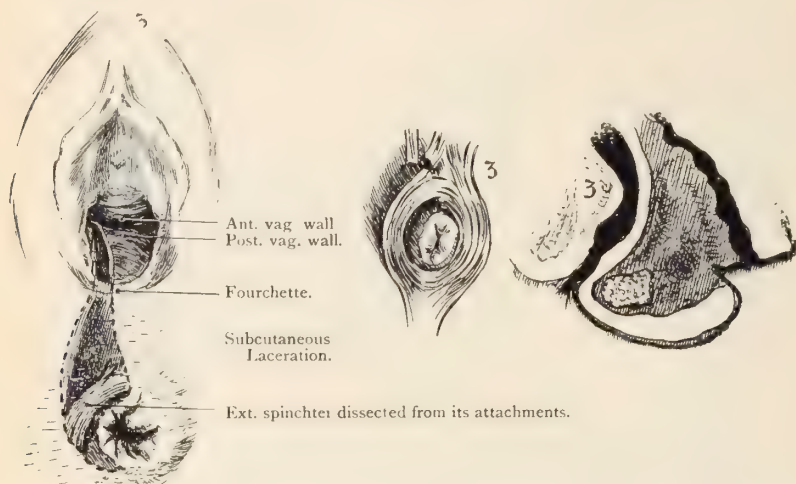


Case II.—Lateral injury of the sphincter ani far from the median line, with a superficial episiotomy wound.

CASE III.—A primipara of thirty-eight was found with a head that had been stationary, R. O. P., almost in contact with the pelvic floor for hours after full dilatation. The pelvis was ample, but the pelvic floor dense and waterlogged. Manual rotation of the head alone was deemed to be sufficient, as the dorsum was to the mother's right, but not looking backward. Forceps extraction with this complete early rotation was easy, but delivery was finished without the blades. The perinæum stretched well (three and a half to four inches) but pitted, even at maximum tension after slow delivery.

The injury began near the right ischial spine and ran to the right side of the fourchette. The skin was untouched below that, but the finger passed backward toward the anus clearly detected the external sphincter on the right side dissected free for an inch, but with little injury, while the internal sphincter and rectal muscular layer were ripped clear through for two inches up the right lateral and posterior aspects of the rectum, leaving the mucous membrane of the whole

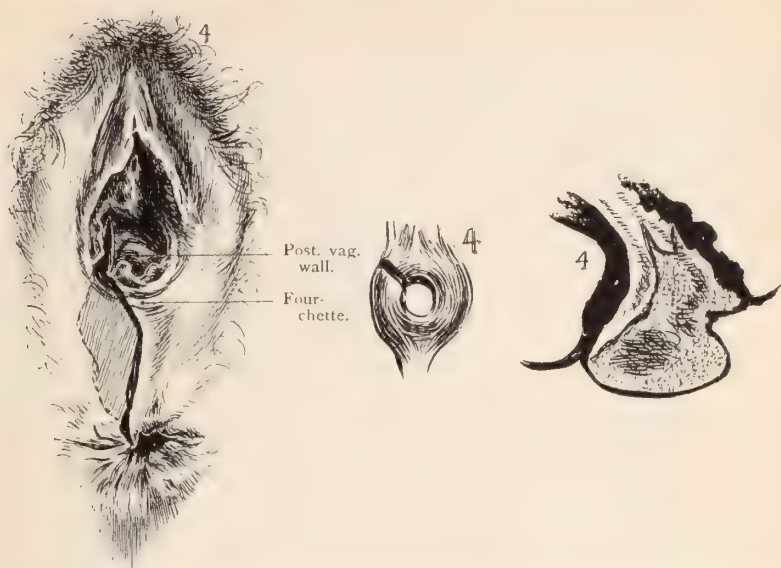
rear canal unharmed. Tier sutures closed the dead space. The skin in such a case should be freely incised to get the best results.



Case III.—A subcutaneous rupture through the perineal body, leaving the sphincter almost intact but stripping it from its lateral attachments.

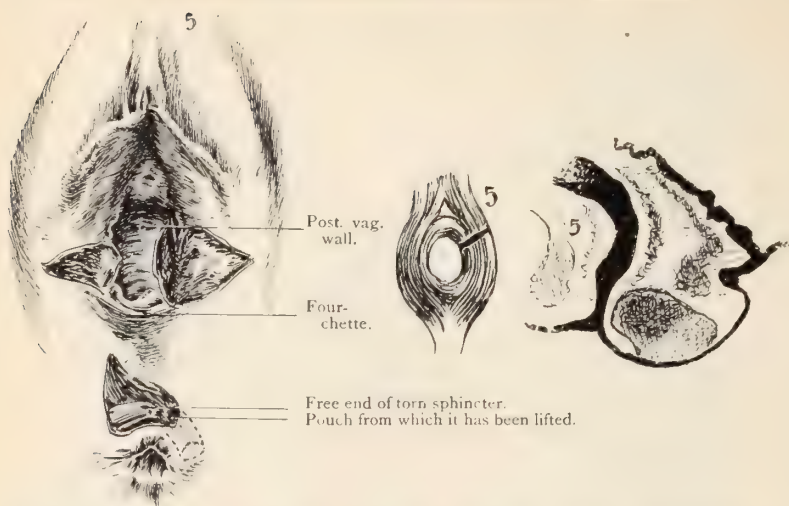
CASE IV.—Mrs. N. This primipara was delivered of a large child with an unmolded head a week before she was seen in consultation. The head lay five hours on the pelvic floor and was stationary three hours at the outlet of the soft parts. Forceps application with considerable traction tore the œdematous perinæum through the sphincter. Seven sutures were applied, but the somewhat septic condition of the patient probably interfered with union. The injury began a short distance up the right vaginal wall, swung to the median line at the fourchette and thence downward, turning back somewhat to the right and cutting through the sphincter not far from the median line, and yet distinctly to the right of it. The main body of the injury, however, on laying it open, was seen to be well to the right of the raphé and to extend clean to the rectal mucous membrane, leaving but a few fibers of the external sphincter untouched, and severing completely the transversus perinæi and the internal sphincter.

Three buried sutures in the sphincter, three gut sutures on the posterior vaginal wall, and three silkworm sutures in the main body of the injury brought about an excellent result with a strong and resisting sphincter.



CASE IV.—A considerable tear through the perineal body, involving the sphincter and extending off toward the right in its deeper part.

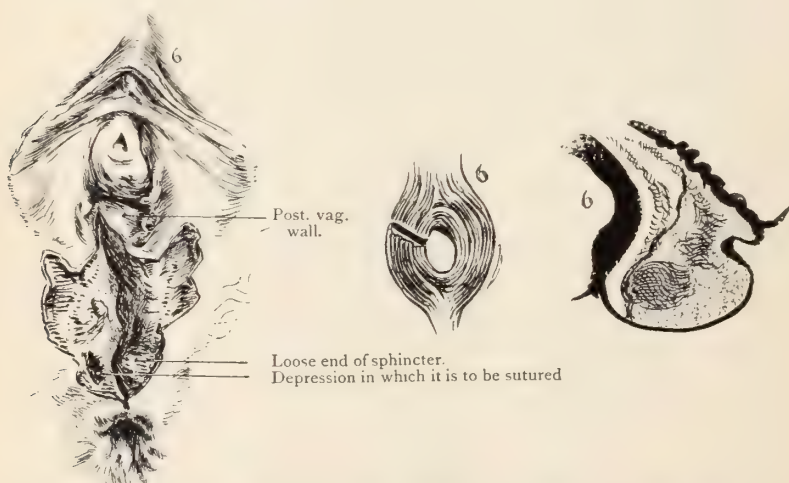
CASE V.—Mrs. S., a primipara, aged twenty-seven, with a three-inch-and-three-quarter true conjugate, and a very narrow arch, went through a long hysterical labor requiring manual dilatation on account of the maternal exhaustion, and later forceps delivery from the middle of the pelvis. The narrowness of the arch threw greater pressure on the pelvic floor, which was increased by the marked forward location of the vulvar opening, and œdema and rigidity of the pelvic floor. So slight was the yielding, and so little India-rubber quality did the vulvar opening possess, that the anterior or pubic segment measured from the ligamentum arcuatum to the anterior edge of the distended opening four inches when the occiput showed but slightly. Extensive injury was predicted from the first, and deep lateral incisions were made; yet, notwithstanding skilled assistance and a forty-five-minute dilatation of the parts, a tear extended up the left lateral vaginal wall from the episiotomy incision to the cervix; the other episiotomy did not extend beyond the incision. The main structures between the vagina and rectum in the median line were unhurt even subcutaneously; but just in front of the anus a half-inch opening in the skin occurred, and through this a tag of sphincter hung out; the pocket in which it belonged was on the left side. Had not the skin



Case V.—Two episiotomy wounds, one having extended upward, together with an extra-median injury of the external sphincter seen through a small wound in the skin surface.

parted it is probable that the gaping of the anus would have been referred to temporary paralysis of the sphincter from distention during labor, and we would not have discovered and united this important injury.

The result, after a month, is all that could be desired.

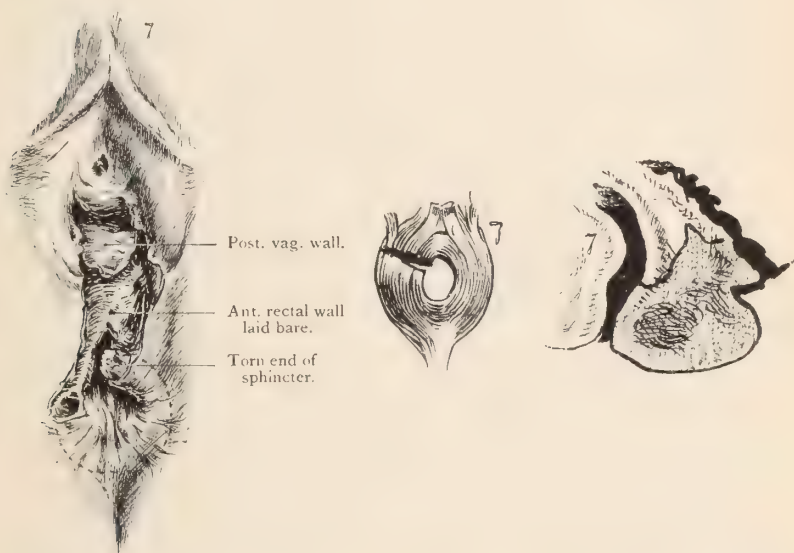


Case VI.—An extensive tear to the anal opening, internally in the median line.

CASE VI.—Mrs. K., a primipara, was first seen seven days after the injury, which involved the posterior vaginal wall for three quarters of an inch, all the skin surfaces of the perineal body, the external sphincter, and terminated at the rectal mucous membrane. In this patient a distinct excavation could be made out in the tissues on the right side after the surface had been thoroughly scrubbed off with gauze, and opposite the pit the end of the sphincter could be distinctly drawn out.

By the usual method of suturing an excellent perinæum was built, and perfect union resulted.

CASE VII.—Mrs. H., a primipara, aged twenty-five, who had been delivered three weeks previously and torn to the rectum without an attempt to unite the raw surfaces, was anæsthetized, and the wound freely opened and studied. The injury was an unusual one, in that the chief damage to the vaginal wall had been on the left side,



Csea VII.—Laceration involving nearly the whole of the perineal pyramid, almost in the median line, except that the sphincter parted ninety degrees to one side of the median line. The muscle diagram is erroneous.

whereas the sphincter had been laterally injured on its right side, and the tear had thus crossed over through the perineal body; the anterior vaginal wall on the left side was torn—how extensively my notes

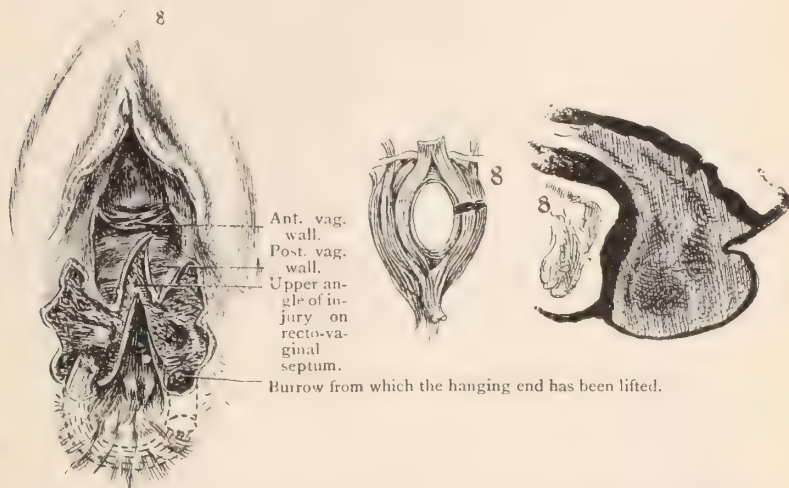
do not say. The posterior vaginal wall disclosed an opening down to the rectal mucous membrane, and the whole of the perineal pyramid had given way. The end of the sphincter projected from the surface like a large granulating pile, and the sulcus in which it belonged was distinct beneath it; the anus gaped, and there had been little attempt at union by granulation. The internal sphincter had probably given way also, but the levator seemed to have escaped.

Three sutures were placed in the rectal mucous membrane, the curette quarried in the pit, two sutures pulled the reluctant retracted end to the light to be attached to the pendent part, and the two ends were fitted together. Catgut and silk united the rest of the perineal body. Ten days later, when I next saw her, the union was found to be beyond criticism and the anus to be strongly puckered, and to resent all the pressure I dared to put upon it. In this tenement-house case, however, directions had not been carried out, and the rectum was packed with large masses ten days old. That day, notwithstanding all our warnings of the danger of undoing our handiwork, the patient, in the absence of the nurse, got out on the chamber to satisfy her desire for vigorous straining, and delivered herself rapidly of large masses which tore the sphincter ends apart.

CASE VIII.—Mrs. V., a primipara with nephritis, had been delivered two weeks before I saw her, by forceps, after a thirty-six-hour labor. The injury was said to have run up the recto-vaginal septum, and the sutures then placed had not prevented fæces from escaping through the vagina. I found an injury severing the septum a full inch and a half above the anal orifice, with but slight union, while the injury to the vaginal mucous membrane to the left of the median line ran up half way to the fornix.

The raw surfaces were thoroughly curetted, and the rectal and vaginal mucous membranes separately sutured. The transversus perinæi had given way to the left of the median line; the internal sphincter had parted to the left of the median line; and on this same side the retracted end of the external sphincter was found in a pit deep to the side of the orifice, while the bared muscular bundle which belonged in this depression could be drawn over to fit into this in such a way that it much resembled a distal joint of the little finger. It was held in place by two buried catgut sutures and one deep sweep of silkworm; the other muscle ends were caught with buried catgut sutures, a satisfactory triangular body constructed, and I am told that the union has been perfect.

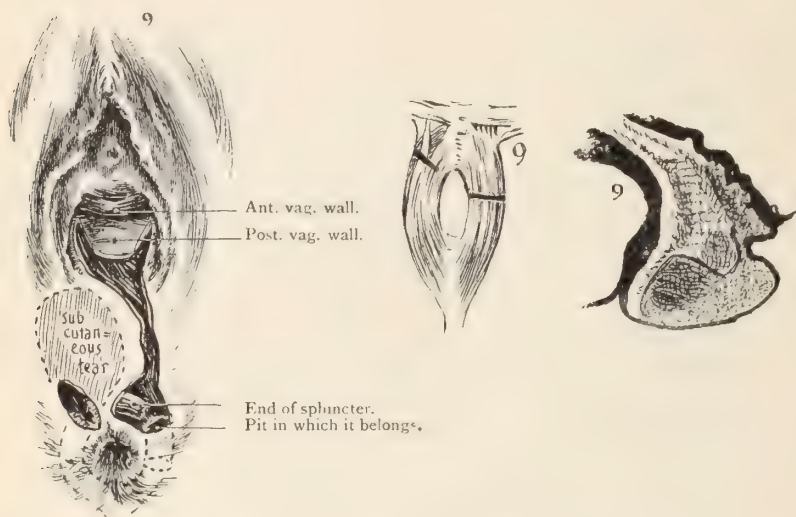
In this case I was pleased to see the good effect of the Fowler figure-of-eight suture in these deep muscular injuries.



CASE VIII.—Complete rupture, involving the recto-vaginal wall, and nearly symmetrical except for the sphincter injury and the injury to the transversus perinaei, which are both torn well to the left.

CASE IX.—Mrs. T., twenty-six, II-para. Difficult labor four years and a half ago, with a six-pound-and-a-half child; hip-joint disease as a child, with ankylosis. Had been in labor twelve hours when first seen, and for four hours attempts at delivery with the forceps had been made under anæsthesia. The pelvis was an oblique-ovate, with a true conjugate of three and three eighths inches and general contraction. The child was dead: the head L. O. A., and well engaged: molding and flexion excellent. Tarnier forceps failing, perforation and evacuation of the brain permitted easy delivery of the head, but the utmost efforts were demanded to deliver the body, and during its exit the contused and œdematous pelvic floor gave way in a peculiar manner. A short tear ran up each vaginal sulcus on the posterior wall; the scar of her former injury gave way on the skin surface, and this injury continued down to the left side of the anus through the sphincter, distinctly on the left side of the anal opening, so that there was a clearly defined pit, admitting half of the last phalanx of the index finger, while hanging over it was to be seen the end of the sphincter bared of its sheath and retracted. The injury was about 90° from the median line. On the left side nearly 60°

from the median line the external sphincter had been torn half way through its outer edge, and at this point an opening in the skin existed which just admitted a finger and allowed it to pass two inches



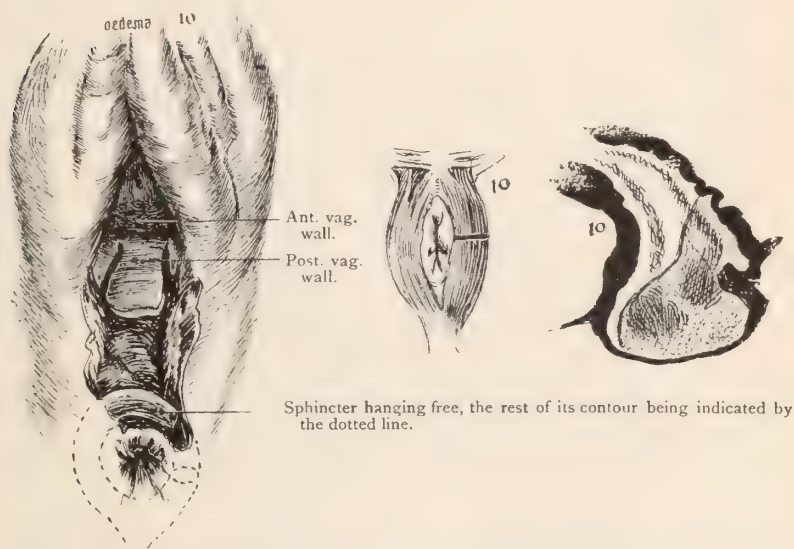
CASE IX.—A double tear through the perineal body, with an uninjured median septum, the tear severing the sphincter entirely on the left, while the subcutaneous tear on the right partly severs the muscle.

and a half into the perineal body and recto-vaginal septum; but this injury had no point of communication with the first, though separated from it by a thin wall of tissue. The inner fibers of the levator were torn through, as I could accurately ascertain.

The right-side injury was first sutured with buried catgut sutures, and then the projecting end of the sphincter of the left-side laceration was drawn down into the pocket or pit from which it had been rooted up, and firmly fastened there by two buried catgut sutures before the rest of the laceration was united. The patient developed a pelvic abscess that was opened above Poupart's ligament but she died of sepsis and pneumonia.

CASE X.—Mrs. S—y, a strong young primipara, had a long hard labor, with a breech presenting L. S. A. I was called when the breech had been in the pelvis six hours and the foetal heart was growing dangerously rapid and the vulva was swollen beyond recognition. The feet were up against the face and the true conjugate was four inches and one eighth. I brought down both legs and delivered, and

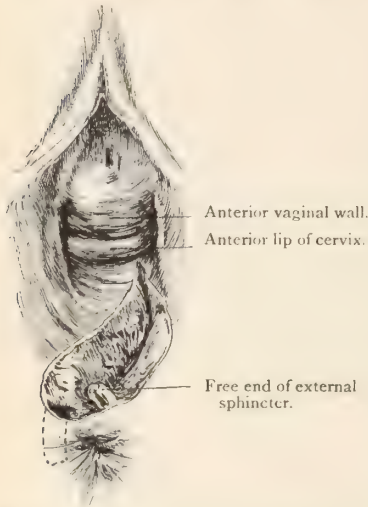
the perinæum was as badly torn as I had foretold. The injury was Y-shaped as far as the posterior vaginal wall and the skin surface of the perinæum were concerned, but the foot of the stalk of the Y was bent sharply to the left and the sphincter had given way to the left of the anal opening, about 90° from the median line. The injury was an extensive one. The posterior vaginal wall and anterior rectal wall were split apart transversely clean to the cervix and it is possible that there was a levator injury on the left side. A tier of sutures closed the great gap between rectum and vagina and the deep structures where levator fibers were supposed to need approximation, and a small drainage-tube left in the wound. Then the sphincter was seized by its upper overhanging uprooted end, and this was stitched down into the pocket where it belonged: when drawn out to be pulled over to its place it measured one inch. Silk sutures steadied the main body of the injury. Extensive swelling and some suppura-



Case X.—A considerable tear running up both vaginal sulci and baring a very large section of the external sphincter in a very oedematous pelvic floor.

tion occurred, but the sphincter held well, and ten weeks after the injury its action was robust and perfect, the skin surface of the perineal body measured one inch and a half, and the union throughout was very satisfactory.

CASE XI.—M. F., twenty ; primipara. Was brought into the hospital after she had been three days in labor. Her conjugate of the



Case XI.—A laceration involving the larger portion of the perineal body in which the main injury to the posterior vaginal wall is on the left side, whereas the sphincter has given way on the right, as in Case VII.

inlet was below normal ; her pulse very weak ; the head on the pelvic floor, L. O. P. ; perinæum unyielding, œdematous. Hæmorrhage necessitated rapid delivery, and rotation could not be completed. The laceration began half way up the posterior vaginal wall on the left side and ran to the anus, crossing the perineal body in its course, and severing it completely. The injury to the sphincter was on the right side between anus and tuberosity. The pit from which the bared end of the muscle had been drawn up, is said in the notes of the case to have been half an inch deep. On the twelfth day there was good union, with a strong and resisting sphincter, in which no difference was to be detected on the two sides.

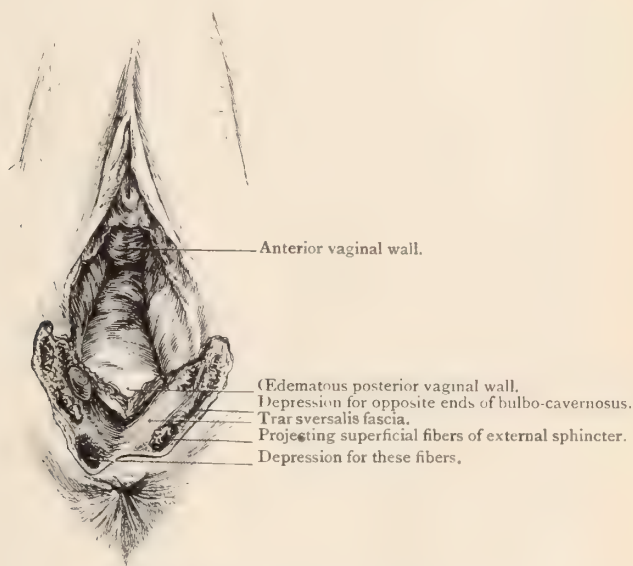
Two buried sutures had united it, and for a few days thereafter there was still a tiny fistulous tract down to them.

CASE XII.—L. O'H., a young primipara, was slowly and warily delivered, the perineal stage lasting one hour and a half, yet considerable laceration resulted. It was nearly symmetrical in appearance at first glance when drawn open, but closer inspection showed that the bulbo-cavernosus gave way on the left side near the raphé, that the superficial fibers of the sphincter projected on the left side while a shallow pit lay open opposite them. The bulk of the sphincter lay uninjured, the transversalis fascia was stripped clean, and the œdematous posterior vaginal wall had been partly peeled up off the rectal wall. Accurate apposition—good union.

CASE XIII.—Mrs. B., a vigorous primipara of twenty-seven, with a pelvis of average measurements, had been in the second stage two hours when Elliot forceps was applied and prolonged attempts made to deliver a left occipito-posterior, which was not firmly engaged. The forceps had slipped off once or twice, and the injury to the pel-

vic floor was considerable when I first saw her. Passing the hand in, the molding was found to be fairly good and a seizure on the posterior shoulder was effected, and rotation to the front accomplished with no great difficulty; thereafter delivery was facile, the forceps being removed in the perineal stage and the child expelled by *expressio fatus*. The septum had yielded about a quarter of an inch above the external sphincter, the vagina had given way but a short distance and on the right side, so that the greatest length of the injury was on the skin surface of the perineal body. The sphincter had been rooted up out of its bed on the right side of the anus, giving way on an imaginary line joining the anus and the tuberosity of the ischium, and then retracting in each direction.

I stitched the bare muscle back into its burrow after uniting the rectal and anal mucous membranes, and the result, as it shows itself after eight years, is a strong sphincter with no appreciable evidence of difference between its right and left sides.



CASE XII.—A tear of an cedematous perinæum in which the bulbo-cavernosus and transversus perinæi gave way on the left and the superficial fibers of the external sphincter on the right. A large vein also shows.

CASE XIV.—This primipara was delivered at term through a three-and-three-quarter-inch true conjugate, with a history of albuminuria, general œdema, and mitral insufficiency, and after a labor

lasting nearly four days. When I saw her the pelvic floor was very œdematous and unyielding, and notwithstanding a right-side episiotomy and slow extraction with the forceps, the pineal tissues gave way. The injury began at the hymen at the junction of the left side and the posterior arc and did not involve the skin, but ran underneath it distinctly to the left of the median line backward, denuding the rectal wall from its attachments and severing about half of the bulk of the external sphincter. Buried sutures secured good union.

CASE XV.—Mrs. S., a V-para of thirty at the eighth month; had had one or more severe forceps labors with various complications. The only child that had been born alive had been premature and delivered with instruments. The patient was very obese and flabby, and her diagonal conjugate did not measure over three inches and a half. She had had albuminuria for some time. I saw her after she had been four hours in labor, and when she had been already comatose and stertorous for more than an hour after eight convulsions. The child was dead, R. O. P. Great general anasarca was present. I was able to do a manual dilatation to carry the head into the cavity of the pelvis, to rotate to apply forceps, and to extract rapidly. The *accouchement forcé* was not over fifteen minutes in duration, and it was a case in which the contracted uterine wall made version impossible. The perinæum had already been torn to the sphincter, and I completed the injury in my haste to save my patient by drawing it out of its sheath on the left side.



FIG. II.

The patient rallied somewhat but died of her extensive nephritis.

CASE XVI.—A III-para of thirty, with an impacted breech, L. S. A., half way through an average pelvis, after twenty hours of labor. Brought down both legs and the extended arms. A considerable mass of flat scar tissue*in the pelvic floor insured lack of elasticity in the opening and a tear on the left side. One inch (2.5 cm.) of a clean-stripped muscular bundle five sixteenths of an inch (75 mm.) in diameter retracting to a bunch projecting one fourth of an inch (60 mm.), was to be recognized as constituting two thirds the thickness of the external sphincter, while the opening in which it belonged showed opposite. A good result.

CASE XVII.—Mrs. W. D. This patient came under my care in her second delivery with a history of previous forceps extraction with considerable laceration, and no attempt at suturing. Both at the time of her delivery and ever since there has been found a large rec-

tocele, with evidence of complete laceration of the perineal body to the rectal mucous membrane, with the usual Y-formed prolongation up the posterior vaginal wall on each side, and evidence of the injury having extended backward through the sphincters on the left side. The sphincters give fairly good control of liquid stools and gas, because of the well-defined bridge of scar tissue at the lower point of the old laceration. Operation is refused.

CASE XVIII.—A photograph of this case (Fig. 2) shows the inequality of the injury to this sphincter, though the perineal body must have been somewhat symmetrically destroyed, else it would show some such aspect as in Leopold's figure (Fig 4).

CASE XIX.—A strong Swedish primipara had been in vigorous labor sixteen hours. Normal pelvic measures except moderate obliquity. Large child, R. O. P., head midway in pelvic cavity, pelvic floor boggy. Head was rotated with sagittal in transverse and Tarnier forceps tried with little result except to make pelvic floor in rot-tener condition. Heart stopped. Hand was slid past head, pulseless cord found twice around neck; shoulder seized (as I have been in the habit of doing in all troublesome cases for years) rapid rotation effected, head crowded down into inlet, Elliot forceps applied and child rapidly extracted. Injury was chosen rather than a dead child. Large live child, ten and one eighth pounds, and large injury.

Beginning our search at the anal end we found a tear through the skin surface of perinæum, through the bulky sphincter externus about two thirds of its thickness, thirty degrees to left of median line, through the transversi and bulbo-cavernosus to the left of the central tendon; the spread of the Y reached on the left half an inch up the vaginal mucous membrane, and on the right half way up the lateral wall. Slipping a finger into the right vaginal wound it passed nearly to the posterior fornix, *alongside* of the rectum, probably above the levator and recto-vesical fascia, and splitting cleanly out to the lateral pelvic wall. On the other side the same condition was found.

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ACUTE LOCALIZED VS. DIFFUSE PERITONITIS IN
WOMEN FROM A CLINICAL STANDPOINT.*

BY HENRY C. COE, M. D.

It seems as if the enormous increase in medical literature were sometimes a hindrance rather than a help to us in the practical application of the fundamental principles of our science. In the days when we depended more on our own experience and observation, and less on the contradictory teachings of the last new books, our rules of differential diagnosis were more clearly defined, and we were less liable to overlook probable conditions while seeking for those which are only possible. This comment applies particularly to gynecology, which branch of medicine, more than any other, has suffered from an excess of literature. The changes which have been rung on every theme have served to confuse specialists themselves. When every society discussion develops such radical differences of opinion between eminent authorities, it is not surprising that the general practitioner is apt to infer that the whole subject of diseases of women is in a process of transition and that few questions have been positively settled. One result of the aggressive tendency of gynecology must strike every consultant—what may be called the surgical education of the practitioner, so that in a consultation it is often the latter rather than the former who first suggests the advisability of operative interference. While from one point of view this progressive tendency is to be commended and has undoubtedly resulted in the saving of many lives which were formerly sacrificed to timidity and unwise confidence in Nature, from another it would appear as if the general practitioner were in danger of forgetting that there are still a considerable proportion of pelvic affections which do not require the aid of the surgeon for their relief.

This somewhat prolix introduction is intended as an excuse for presenting a subject which has been discussed so often that it seems almost threadbare. But, in my experience it is still necessary to rid our minds of the confusing details which have been added to the original clinical picture of peritonitis and to formulate certain rules for our guidance at the bedside—a place where theories must always give place to *facts*. When we see practitioners of more than

* Read before the New York County Medical Society, March 25, 1895.

average intelligence, if confronted with an ordinary case of pelvic suppuration, oppressed with the bugbear of impending rupture of a pyosalpinx into the general peritoneal cavity (an accident so rare that few of us have seen more than two or three cases), and find that it seems to be the prevailing impression that the presence of tympanites associated with abdominal pain, a rapid pulse, and elevation of temperature, necessitates the giving of a gloomy prognosis, we are led to ask whether we have improved very much upon our predecessors who unfortunately had so much more practical experience with the medical treatment of peritonitis than we. I think that we can still find profitable matter for discussion in this familiar theme. It is unnecessary to rehearse the characteristic symptoms presented by virulent general peritonitis, such, for example, as follows the rupture of an ovarian or appendiceal abscess, and terminates fatally in four or five days, since the question of differential diagnosis does not arise in such cases, but in those which, as Thomas has remarked, "may run their fearful course with the greatest obscurity, so as to mislead the most careful diagnostician, even up to their latest stages." A careful review of the history is all-important, since the overlooking or misinterpretation of facts which may appear to be of minor importance often leads to an erroneous theory, which the symptoms are made to support. Thus the fact that a patient has had one or more previous attacks should at once lead to the suspicion of a purely local trouble. The existence of a previous affection of the annexa is not always easy to determine from the patient's statements. The difficulty of diagnosing appendicitis from salpingitis in the female is well known, also the frequency with which these conditions co-exist. Even in puerperal cases one must constantly bear in mind the possibility of the appendiceal origin of a peritonitis which appears to be secondary to infection of the genital tract. On the other hand, many cases of ovarian and true pelvic abscess have been incised in the region of the appendix under the impression that the latter was the origin of the suppuration. But, whatever may be the starting point, it is important to establish the fact that at some time in the history of the case the pain and tenderness were *localized*. This is all the more important because after the patient has been drugged with opium for several days, one who sees her for the first time finds it difficult to bring out this point clearly. The original condition is then masked, while the rapid, hard pulse, high temperature, persistent vomiting, tympanites, and pinched, anxious facies, lead the attendant to believe that even if it was originally localized, it has now become merged in a general peritonitis.

In his anxiety to render the patient comfortable, he has not only made her worse, and added to his own anxiety, but has lost the clew to the diagnosis. The length of time during which the symptoms have continued is an important point which we too often overlook. The fact that they have persisted for several days without becoming progressively worse should, even in the absence of other data, lead to the inference that the trouble is localized. When the characteristic thermometric variations, sweating, etc., which indicate suppuration, develop, the diagnosis is clearer, though this may not take place until quite late. The difficulty in locating the septic focus in cases of puerperal infection has been experienced by all of us. Thanks to prompt and intelligent interference, general peritonitis of puerperal origin is now extremely rare, at least in women under the care of physicians. In modern lying-in institutions it is practically unknown.

Any attempt to establish a positive differential diagnosis between general and localized peritonitis from an analysis of individual symptoms would be most unscientific; indeed the common source of diagnostic errors in all abdominal affections is the effort to base an opinion on symptom, or group of symptoms, which are supposed to be characteristic. Can we place any dependence on the classical "rapid, wiry pulse" of diffuse peritonitis? Who has not observed it in the ordinary pelvic variety? As for the temperature (except in the fatal cases), we must admit that a recent writer expresses the general belief when he says that "for him who implicitly trusts to the revelations of the thermometer in this affection it will prove an unreliable guide." And yet how often are we plunged into the depths of despair by a temperature of 104° or 105° and on the other hand are disposed to think that all danger is over when it falls to 100° ! We are disturbed by the presence of general abdominal pain and tenderness in one case, and in another lull ourselves into a state of over-confidence by their entire absence, forgetting that the apparent comfort of the patient may really be that fatal apathy which heralds the approach of death.

Vomiting in a typical case of diffuse septic peritonitis is certainly a characteristic symptom, but it is by no means always present, even in fatal cases, until just before death, in a patient who has been carefully handled. On the other hand, persistent vomiting is not infrequently present in cases of localized trouble, where unwise attempts at feeding and medication (especially the excessive use of opium) keep the stomach in an irritable condition. Tympanites is no longer regarded as pathognomonic of general peritonitis (excluding the ex-

treme form seen in rapidly fatal cases), though it always causes some uneasiness. It is often excessive, even in pelvic peritonitis, though it is not apt to be either persistent or so well marked about the umbilical region, neither are the peristaltic movements of the intestines limited or absent, unless as the result of hyper-medication. I have not referred to constipation, because I believe that altogether too much stress has been laid upon its importance in connection with prognosis. The abdominal surgeons have been responsible for this erroneous interpretation. It is only after one has seen patients die of post-operative peritonitis on the seventh or eighth day, after having had daily evacuations of the bowels, and others make a good recovery who do not respond to laxatives and enemata for five or six days, that he begins to believe that too much stress has been laid on this point.

Now with reference to the much-vexed question of early purgation *versus* the use of opium in the treatment of peritonitis, I shall only observe that the advantages of both methods have been repeatedly set forth by their adherents, often in language which showed intemperate zeal rather than calm discrimination. As in many other instances, facts have been adjusted to theories. When we hear a man arguing that the death of a patient after an abdominal operation was due to the fact that she received two or three small injections of morphine, or that her bowels were not moved on the routine *third* day, I infer that he is trying to excuse his own errors in technique, perhaps at the expense of the gentleman who assumed the after-treatment of the case. The seductive theory that intraperitoneal sepsis can be eliminated through the intestinal tract is no more susceptible of universal application than is the old teaching that opium is the sheet-anchor in all cases of peritonitis. The temporary amelioration of symptoms observed in cases which nevertheless go on to a fatal termination, either after free purgation or when the pain, vomiting, and restlessness are controlled by the moderate use of opium, are equally misleading. I have no intention of entering into a discussion of this question, and would merely state my belief that the profession will so far overcome that horror of opium in the treatment of peritonitis, due to the influence of abdominal surgeons, that thereby will be used in moderation for the relief of pain, at the same time that intestinal peristalsis is maintained by the judicious administration of laxatives. Personally I have long regarded the action of laxatives as a useful aid to diagnosis. When a persistent amelioration of all the unfavorable symptoms is noted in a case in which the diagnosis be-

tween diffuse and localized peritonitis is doubtful, I have usually felt justified in inferring that the latter condition was present and in giving a favorable prognosis. If the improvement was only temporary, and there was a rapid return of the pain, vomiting, tympanites, and anxious facies, I have assumed that probably no amount of purgation would save the patient. And so with the application of cold and the administration of antipyretics, as in the old heroic age of medicine. Those of us who used the Kibbee cot and ice coil so religiously were impressed with the fact that in the fatal cases of septic peritonitis after ovariectomy the fever was only controlled (when it was at all) by the persistent application of cold, whereas in the cases of localized inflammation (which we then distinguished from the former by calling them "traumatic," because the patients recovered) the fever was not only easily controlled, but the temperature remained lower for several hours after the treatment was suspended. In other words, the behavior of a patient when an ice bag is applied to the abdomen may furnish a valuable clew to the seriousness of her condition.

It is not, then, from the presence of any striking symptom, or symptoms, that one arrives at a decision in a doubtful case. It is the whole picture which we must study, not a few isolated details which stand out in bolder relief than others. To the experienced eye the "look" of a patient with fatal septic peritonitis is rarely misleading. It is just as impossible to describe this as it is to describe the peculiar sensation imparted to the examining finger by commencing epithelioma of the cervix uteri. Nine men who have only read graphic descriptions of the latter will entirely overlook it, while the tenth, who has forgotten the descriptions, but has learned to recognize the disease itself by actual experience, will at once detect it. The facies of a patient with localized peritonitis (no matter how severe the symptoms) is certainly quite different from that of one in whom the inflammation has become general. The detection of the shades of difference is entirely a matter of personal experience and observation. I would not be understood as vaunting this as a peculiar gift possessed only by a chosen few, nor would I have you think that I approve of "snap" diagnoses, made by a glance at the patient. But I leave it to those who were hospital internes ten years or more ago, when septic peritonitis was so common and so fatal, if I am not right in affirming that the facies of the patient alone often justifies us in giving a favorable or gloomy prognosis aside from all the other symptoms. I shall merely refer to the physical examination, for I assume that we are all familiar with the condition found in ordinary cases of localized

peritonitis, of pelvic or appendiceal origin, when it has not been masked by complications, such as pregnancy, tympanites, hysteria, etc. In many cases we must be prepared to derive little or no information from the examination as to the origin of the trouble. The pelvis may be so filled with exudate that it is impossible to map out any organ, or to affirm that the annexa on one side are more diseased than on the other. The patient may no longer be in a condition to locate the seat of greatest tenderness, or general hyperæsthesia may prevent the examiner from comparing the two sides. Under these circumstances high enemata are often of great service, since the resulting diminution of tension allows him to make deeper pressure. If the question of operative interference has been raised, the aid of anæsthesia may be necessary.

There is one factor in cases of pelvic peritonitis which we often overlook. I refer to the hysterical element. As Osler has said, "it has deceived the very elect." I recently saw in consultation a young woman whose condition was judged by an esteemed colleague to be so serious that an early resort to abdominal section might be necessary. He had been misled by the statements of the attendant with regard to the normal condition of the patient. Septic infection after an early abortion was followed by general abdominal pain, constant vomiting, excessive tympanites, elevation of temperature to 103° , and a pulse which averaged 130. She was apparently delirious. A brief review of the history developed the fact that the patient was hysterical and prone to exaggerate her symptoms. She had been placed under the influence of morphine at the outset, the bowels having been locked up, and was simply suffering from the effects of the drug, plus hysteria. Her facies alone was not that of a patient with general peritonitis, and I felt justified in predicting that if medication and attempts at feeding were suspended and a high enema was given, there would soon be a change in the situation—which was fully justified by the result. This is a typical case such as one often sees in consultation. It is obvious how important it is in private practice to recognize the harmless character of the condition before throwing a family into the deepest distress by hinting at the necessity of a formidable operation.

Aside from the question of prognosis, which is so important to the patient and her friends, the general practitioner, who has the laudable desire to leave nothing untried in order to save his patient, naturally asks in every case of peritonitis: "Ought I to call in a surgeon, and if so, when?" Now his decision, as well as that of the surgeon himself,

must be affected by a variety of considerations which do not obtain in hospital practice. This is an important difference which has not been sufficiently emphasized. We report in societies various experimental operations, more or less successful, and doubtless legitimate in their place, but are we prepared to perform them on Fifth Avenue as promptly as on Avenue A, or in our hospitals? Have we yet reached the stage when we would advise and perform symphysiotomy, hysterectomy for suppurative disease, or any other novel and ingenious operation which we have done so successfully in the clinic? I think not, as yet. When we refer to abdominal section for acute general peritonitis, let us understand then that it is still a *hospital* operation—a desperate remedy for a desperate condition.

From an experience of several years in the deadhouse, in which probably nine-tenths of the autopsies were performed on patients dying of post-operative peritonitis, as well as from my subsequent experience at the operating table, I have become quite pessimistic regarding the cure of acute diffuse peritonitis by *cœliotomy*. Undoubted cases, especially those of appendiceal origin, have been operated upon successfully, but from a careful study of the majority of those reported, one must infer that the inflammation was localized, the exudate extending perhaps over half of the abdominal cavity, but still localized, and of course subject to the same treatment as any other abscess. When we speak of abdominal section for diffuse peritonitis, that is an entirely different matter; and when we advise it in private practice let it be with a full understanding on the part of the attending physician and friends that recovery, even after the most thorough breaking up of adhesions, evacuation of pus, irrigation and drainage, is to be regarded as little short of a miracle.

But it is in the localized cases that we find the legitimate field for operative interference and here the results have been so brilliant (especially in appendicitis) that one can readily understand how every case of circumscribed peritonitis should be looked upon as having a possible surgical conclusion.

While acute pelvic peritonitis is no longer regarded as a disease *per se*, but simply as a result or complication of tubal or ovarian trouble, it is rarely that we feel justified (in private practice at least) in dealing in a radical manner with the latter during the height of the attack. Having determined that he has to do with a circumscribed process, which seems to be in no danger of becoming general, it seems wiser for the surgeon not to interfere until he can definitely locate a pus focus, or at least feels reasonably sure from the symptoms that one

exists in the pelvis. The vaginal route offers such safe and easy access that we do not hesitate to resort to explorative puncture and incision without waiting for that well-marked bulging and fluctuation which used to mark a pelvic abscess as "ripe" for operation. Remembering, however, that many patients have repeated attacks of pelvic peritonitis, in whose tubes we afterward find no pus, it does not follow that one should advise an exploration simply because a small mass is detected behind the uterus with a persistent elevation of temperature. Boldness is commendable when tempered with judgment. It is in these cases that delay may be safely advised, but of course not in those in which the presence of an induration in the flank clearly indicates the propriety of a direct incision. The evacuation of even a small quantity of pus *per vaginam* sometimes effects a remarkable amelioration of symptoms, which were so serious as to cause much uneasiness. But it is unnecessary to dwell upon details that are so familiar. My object has been, not so much to lead up to the surgical treatment of pelvic suppuration, as to provoke a discussion from the standpoint of the general practitioner of a subject which, though sufficiently familiar theoretically to us all, can hardly be said to have been completely mastered even by the most experienced.

A CONTRIBUTION TO THE CLINICAL STUDY OF UTERINE FIBROIDS.*

BY ANNA M. FULLERTON, M. D.,

Physician in Charge, Woman's Hospital of Philadelphia.

There is, perhaps, no subject in the domain of gynæcology which has of recent years excited so much interest and discussion as that of the management of uterine fibroids.

The theory of Gottschalk that the occurrence of these growths is favored by every form of local irritation which tends to produce circulatory disturbance explains, I think, a fact well borne out by clinical experience; viz., that *uterine fibroids are on the increase*. This view of the possible origin of fibroids invests the management of all conditions of uterine disease with new importance and extends its

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significance to the progress of involution during the puerperium when all such measures should be employed as are essential to the overcoming of any tendency to subinvolution, or to the prevention of inflammatory or septic complications.

The systematic examination of the puerperal woman two weeks after her delivery, with a view to the employment of such gynæcological treatment as may be indicated for the restoration of the pelvic organs to their normal state, will often serve to avert the dangers attendant upon subinvolution; for, it is early in the lying-in that this condition can best be combated, the pelvic absorbents then being sufficiently active to aid materially in the work. Recent lacerations should be repaired immediately after delivery.

The cases I desire to report to the Society to-night have been selected from among a number that have come under my personal care in the wards of the Woman's Hospital, and are of interest as serving to emphasize the character of the complications which may arise in the history of uterine fibroids.

The first four of these cases involve the perplexing question of the management of pregnancy complicated by the presence of these tumors. Suturgin, in the *Annual of the Universal Medical Sciences* for 1891, claims that scarcely one fifth of the cases complicated by such tumors terminate without surgical interference, and that about one third of the mothers and one half of the children die during or soon after labor. It has been claimed that pedunculated tumors may be freed by careful manipulations from any obstructing position they may occupy and not materially affect a labor; also, that an interstitial myoma of the upper zone of the uterus, even of considerable size, usually offers no mechanical obstruction to labor and should not be touched unless untoward symptoms arise which render an operation imperative. The utter uncertainty as to prognosis, even in tumors thus favorably placed, is shown in the cases I shall narrate.

CASE I.—M. B. was a colored woman aged twenty-nine years, and a primigravida. She came to the hospital February 28, 1889, with the following history: A small tumor had been observed by herself in the lower part of her abdomen during the preceding June. This had rapidly increased in size during the winter, and was the cause of frequent severe colicky pains, for which she sought relief. An examination demonstrated the existence of a tumor about the size of a large orange which was inseparable from the uterus, being attached to the posterior portion of the fundus to the right. The uterus itself was enlarged to the size of a four months gestation and its consistence

was suggestive of pregnancy. Colostrum was found in the breasts. The patient was kept under observation for the next five months, during which time the tumor increased with remarkable rapidity. The entire period of gestation was one of such intense suffering as to necessitate the almost continuous use of opiates for the relief of pain, particularly during the latter month or two of pregnancy when pressure upon the liver and diaphragm produced most distressing pain and dyspnœa. There was no pelvic contraction so that the foetal head engaged without difficulty. On the 27th and 28th of July the patient suffered with irregular and very severe uterine contractions, but



FIG. 1.—Fibro-cystic tumor of uterus attached over placental site.

there was little impression made upon the os uteri. At 12.30 P. M. on the 29th the membranes ruptured and the amniotic liquid came away colored with meconium. Douches of warm bichloride solution and manual dilatation were resorted to, to hasten the labor in the interests of the child. When the os was sufficiently dilated for the application of forceps, the child, a girl weighing 3010 grammes, was extracted without much difficulty at 9.40 P. M. Though asphyxiated it was resuscitated and lived to be discharged in good condition from the hos-

pital, three weeks after its birth. Immediately after the extraction there was quite a free flow from the uterus, which was, however, readily controlled. A few perineal stitches were introduced to repair a slight laceration. The patient soon aroused from the anæsthetic and asked intelligent questions about herself. About two hours later, at 11.25 P. M., she went into a sudden state of collapse from which the most vigorous measures failed to resuscitate her. The autopsy revealed no internal hæmorrhage, and, beyond a slight congestion of the kidneys, no lesion of any organ of the body existed. A large fibro-cystic tumor was found, connected with the uterine fundus. A few recent adhesions existed between the tumor and the anterior abdominal wall. The cæcum was found lying across the pedicle. The placental site was over the uterine attachment of the pedicle, which accounted no doubt for the rapid growth of the tumor. Upon opening the cavities of the heart, numerous bubbles of air escaped. This air it was supposed had entered the uterine sinuses, which, owing to the peculiar situation of the placenta, could not be properly closed. A sudden movement on the part of the patient had probably produced sufficient suction in these sinuses to draw in the air-emboli, thus causing death from paralysis of the heart.

CASE II.—B. H., aged thirty-one years, also a colored woman and a primigravida, came to the hospital April 1, 1889, complaining of difficult micturition and severe abdominal pain. Patient had always suffered from menorrhagia and dysmenorrhœa until within the four months preceding her coming to the hospital, when the flow had been scant. She had noticed at the same time a swelling in her left side, which was excessively tender. The uterus was found enlarged, the fundus reaching the umbilicus and inclined to the right side. A tumor about the size of a fœtal head occupied the left side, its upper border being somewhat higher than the uterine fundus. A pedunculated fibroid complicating pregnancy was diagnosed and the patient kept under observation until the close of gestation. Her symptoms of pain, nausea, dyspnœa, etc., were identical with those in the case just reported, and required the same palliative treatment. Labor began with premature rupture of the membranes, dilatation was slow and had to be aided manually. The irregular character of the uterine contractions with indications of threatened fœtal asphyxia, necessitated a high-forceps application. The child, a boy of over normal weight at term, was asphyxiated when born and could not be resuscitated. A primary trachelorrhaphy and perinæorrhaphy were done for the patient whose puerperium was without event. She left

the hospital three weeks after delivery promising to return for the removal of her tumor.

CASE III.—J. V., a farmer's wife, white, aged forty-two and a primigravida, had been seen early in her pregnancy by the late Dr. William Goodell and advised to see him some months later regarding the possibility of her requiring operative treatment for the delivery of her child. The patient was led by her sufferings to come to the city to see Dr. Goodell on July 6, 1890. As the doctor was not in town, she came to the Woman's Hospital and was examined by myself. She then appeared to be in the eighth month of her pregnancy. She had been married one year. About six months previous to her marriage she had noticed a small lump in the right inguinal region which she said increased markedly in size before each menstrual epoch. It gave her no especial discomfort. Upon examination after admission, the uterus was found to be studded with multiple fibroids. A pedunculated tumor about the size of a large orange was attached to the right side of the uterus low enough down to be distinctly appreciated at the inlet by examination *per vaginam*. One a little smaller was attached to the left side somewhat higher up, while numerous nodules of varying sizes were discovered over the anterior surface of the uterus.

An eminent gynæcologist who kindly examined the case with me upon the occasion of a visit to the hospital, expressed it as his opinion that a uterus so full of fibroid growths would probably contract very irregularly and be subject to rupture; therefore, that a Porro operation would offer the best chances to mother and child. The patient anticipated any operative procedure by a premature rupture of the membranes at 4.30 P. M., July 8, 1890. The pediculated tumors were kept pushed up by manipulations *per vaginam* during the labor and the head allowed to descend—which it did sufficiently to be within the grasp of the obstetric forceps. Extraction was effected by 5 A. M. the next day. The pains throughout the labor were irregular and severe. The child, a girl baby weighing 2710 grammes, was in good condition and still continues to live and thrive.

The mother's convalescence was uneventful, the tumors rapidly decreasing in size. About three weeks after her delivery she left the hospital, determined to return for a hysterectomy. On August 25, 1891 (thirteen months after her first delivery), she returned to the hospital, again pregnant eight months. The history of the preceding pregnancy as to pain and discomfort was repeated.

The uterine tumors, particularly the one to the right, were larger than in the preceding year, and thus offered more of an obstruction

to the descent of the presenting part—the head. After waiting long enough to find that the head would not mold sufficiently to engage in the superior strait, I performed version. Some difficulty was experienced in the extraction of the after-coming head which became extended, hence the child, a boy, made some premature efforts at respiration before extraction was completed. The child was larger than the former child, the head firmer. It lived twenty-four hours and then died of secondary asphyxia. The mother's convalescence was uneventful. On April 30, 1893, about a year and a half from the time of her last discharge from the hospital, the patient returned, pregnant for the third time. The head of the fœtus descended with less difficulty as the pedicles of the tumors seemed somewhat elongated, hence they could be more readily pushed up from their encroachment upon the inlet. The child, a girl baby, weighing 3100 grammes, was extracted by forceps—in good condition. It still continues to live and thrive. The mother again made a good convalescence. Since her return to her home she has written me that the tumors have greatly decreased in size.

CASE IV.—A. B., a colored woman, aged twenty-nine years, a primigravida, was sent to the hospital on November 20, 1893, for the removal of a uterine fibroid which caused her much bladder irritation and pelvic pain, with aggravated nervous symptoms of a reflex character. The patient had suffered with menorrhagia up to October, 1893, after which the discharge had entirely ceased, and the abdomen increased rapidly in size. Upon examination the fundus of the uterus was found to be one finger's breadth from the costal margin anteriorly on the left side and within three fingers' breadth on the right. There was more decided resistance on the left side of the uterus than on the right. Some colostrum was found in the breasts, the uterine cervix was softened, nausea and vomiting existed. A possible pregnancy complicating the fibroid tumor was diagnosticated. The fœtal heart sounds could not be heard before December 11th, when they were appreciated near the right lumbar region. Hospital care relieved the patient of some of her most distressing symptoms, and, after consultation with some of the other members of the hospital staff, she was allowed to go home, until nearer the close of her gestation, when she was advised to return for a possible Porro operation. On February 24 and 25, 1894, the patient suffered with severe uterine contractions and came to the hospital at 2 A. M. February 26th. There was no decided shortening of the uterine cervix, hence an effort was made to quiet the contractions by the use of opium suppositories,

with rest in bed. At 7 A. M. on the 28th the pains returned with renewed vigor and could not be thus controlled. Dilatation went on rapidly and the foetus was spontaneously expelled. The placenta being retained, an anæsthetic was given and the hand carried into the uterine cavity. The placenta was found to be adherent to the



FIG. 2.—Submucous fibroid of uterus complicating pregnancy.
Six months' gestation.

right side of the anterior wall of the uterus opposite the site of the tumor. It was carefully separated and removed. During the manipulation it was found that the tumor was a large submucous fibroid, which entirely filled the uterine cavity when its walls contracted down upon it. In looking at the specimens from this case it would seem almost incredible that gestation for so advanced a period of pregnancy could have existed with so large an intra-uterine growth. The portions of the uterine wall not occupied by the tumor were so thinned by the distention to which they were subjected, that it was a marvel no rupture occurred. After delivery the uterus and vagina were thoroughly irrigated with a bichloride solution. An iodoform suppository was introduced into the vagina, and the usual antiseptic occlusion dressings applied.

The child was alive when born and lived about half an hour. It

opened its eyes and used its limbs. The length was forty centimetres, weight five hundred and twenty grammes. The face, limbs, and back were covered with lanugo. There was no vernix caseosa. No toe-nails. Beginning development of one or two finger-nails. The aural and nasal cartilages were undeveloped. The fontanelles were large and separation of nearly one centimetre existed in the sagittal suture. The skin was very thin and transparent. The placenta was largely covered with areas of thickened decidua, and there were some spots of fatty degeneration. Until the second week, following the delivery, the puerperium was without event, except for the persistence of pain, localized in the inguinal regions and supposed to be induced by uterine contractions excited by the presence of the tumor. There was no rise of temperature, the pulse ranged between 75 and 80. On the thirteenth day following her delivery there was a sudden rise of temperature to 102.6° and the pulse to 104. A slight odor was noticed to the lochia. The uterus was irrigated with a bichloride solution and the patient's temperature fell to 100° . Vomiting of a greenish mucus set in and continued so persistently that the patient had to be nourished entirely by bowel. Uterine irrigation was employed daily and the patient and her friends urged to give their consent to an operation for removal of the pelvic organs. This was not gained until six days after the manifestation of the first septic symptoms. During this time the tumor increased markedly in size, general peritonitis set in and prostration was extreme. After the friends gave their consent to operative interference a consultation was held immediately, but it was deemed unadvisable to proceed as the patient was then moribund. She died within six hours after the consent of her friends had been obtained. An autopsy made three hours after death proved that operative interference at that late date would have done nothing for her, and afforded a most striking illustration of the rapidity of the action of sepsis during the puerperium. The abdomen was distended and tense, filled with about a quart of a dirty-gray fluid, emitting a foul odor which, upon microscopical examination, was found to be full of pus. The entire parietal peritonæum was covered with fibrinous lymph. The intestines were matted together and injected in patches, and their mucous coat considerably thickened. The great omentum was thickened, injected, and adherent to the intestines. The spleen was flabby, necrotic, and highly congested; its parietal surface was a light-green color with small foci of pus. The liver, soft and necrotic, showed fatty degeneration, as also did the kidneys. The uterus was greatly enlarged, its fundus three fingers'

breadth above the umbilicus. The whole organ was glued to the surrounding tissues. Adhesions on left side were apparently of older formation than on the right. Both left tube and ovary were tightly adherent to the parietal peritonæum and rectum by their outer and to the uterus by their inner surface. The right tube and ovary were adherent to a less extent. Considerable purulent fluid welled up from the left broad ligament and ovary as the pelvic cavity was entered. Section of the uterus showed the cavity to be occupied by a single submucous myoma in a state of degeneration. The endometrium was in a condition of gangrenous endometritis. Death, it was decided, was due to sepsis from gangrenous endometritis resulting from the breaking down of the tumor which infected the endometrium.

A patient is at present under my care, having fibroids complicating a pregnancy. She is colored, aged twenty-six, and pregnant for the second time. She miscarried at five months last July. The miscarriage she states was followed by childbed fever. The present pregnancy has been prolonged to the end of the seventh month, simply by continuous rest in bed, the foot of the bed being elevated to relieve pelvic pressure, and opiates almost constantly employed to quiet uterine contractions. The sum of human suffering and calamity represented by the history of the cases just cited, incline me to the belief that should we be able to prolong this pregnancy to term, a Porro operation would be the most satisfactory method in the management of the case; or, should the patient at any time be delivered *per via naturales*, we should be prepared to do hysterectomy at the earliest manifestation of septic complication.

As time is limited, I shall refer but briefly to the other specimens presented to the Society to-night.

One of these—a large, œdematous myoma—was removed by me four weeks ago, from a patient who had been so exsanguinated by successive hæmorrhages, as to be reduced to a condition bordering upon pernicious anæmia. She is a white woman, forty years of age, married and childless. The growth had been noticed nine years. Her blood was examined upon admission to the hospital, with the following result: Red cells, irregular in shape, agglutinated, and numbering about 2,400,000. Hæmoglobin twenty-five per cent. Upon the recommendation of Professor Frederick P. Henry, who saw her with me, she was placed upon treatment for anæmia prior to any operative procedure. Rest in bed, with the foot of the bed elevated to relieve pelvic pressure, ferruginous tonics, bone-marrow, and forced feeding

were employed. The vagina was kept continuously tamponed with iodoform gauze. The blood was examined every two or three weeks. The patient was thus kept under treatment from the middle of October, 1894, until March 6, 1895, when the operation was done. On the 26th of February the examination made of the blood showed the increase of red blood-corpuscles to 5,300,000, their shape regular, while the hæmoglobin was increased to fifty-five per cent. The operation was therefore decided upon. The entire uterus was removed by amputation at the vaginal junction, the peritonæum being drawn over the stump.

A separate nodule—subperitoneal—was an outgrowth from the supravaginal portion of the cervix and occupied Douglas' *cul-de-sac*. The peritonæum was stripped from this and it was peeled out, after the remainder of the uterus was cut away. The ovaries were greatly enlarged, and the ovarian plexus of vessels on both sides greatly engorged. The patient received a pint of normal salt solution by cellular transfusion after operation. Her recovery has been very satisfactory.

Another specimen removed by me on January 12, 1895, is of interest as showing the condition of calcareous degeneration in a uterine fibroid—the largest tumor I have ever seen which has undergone this change. The patient is fifty-nine years of age, married and childless. The tumor lay in the hollow of the sacrum and caused great distress from pressure. The uterus was amputated at the vaginal junction. The patient made a good recovery.

The other two specimens were deep-seated fibroids removed by the same process by myself, during the preceding year. They had caused much hæmorrhage and pain. I have brought them here to-night simply in illustration of a class of cases in which I think management of the stump according to the old method would have been exceedingly difficult, if not impossible. The patients made an excellent recovery.

A REPORT OF TWO CASES.

I. SYMPHYSIOTOMY. II. ELECTIVE CÆSAREAN SECTION.*

BY HENRY D. FRY, M. D.,

Professor of Obstetrics, Medical Department of Georgetown University,
Washington, D. C.

The following cases are deemed worthy of report not only on account of especial interest in each, but as a matter of record.

In 1892, I had the pleasure of hearing Dr. W. P. Harris read his paper on The Remarkable Results of Antiseptic Symphysiotomy at the meeting in Brooklyn of the American Gynæcological Society.

Impressed with the wonderful results of the modern operation I shared, with many others present, a deep conviction of its value and determined to perform the operation in the next suitable case. There came to my recollection the histories of some five or six cases of difficult labor due to contracted pelves which had been terminated by artificial means. Although the mothers all recovered—one or two after protracted convalescence—the result was more disastrous to the infants, only one being born alive.

Of the Fellows of the Society who were present when Dr. Harris read his paper, Dr. Jewett happened to be the first to whom the opportunity came of performing the revived operation. But ten days elapsed before the case presented itself and the result was successful to the mother. The infant died twenty-four hours after its birth from the prolonged compression of the head before Dr. Jewett was called to the case.

I procured a Galbiati knife and awaited my first case while the medical journals were reporting successful operations in different parts of the United States—Philadelphia, Baltimore, New York, etc. One day, while at the Garfield Hospital my attention was called to a young colored girl who was awaiting her approaching confinement, and to add interest to the case she had a contracted pelvis. Abdominal palpation showed that the child was presenting by the breech with the back to the mother's left. Fœtal heart sounds normal. The pelvic measurements were as follows :

* Read before the Medical Society of the District of Columbia, Wednesday, March 13, 1895.

Between the spines of the ilium.....	24 cm.
“ “ crests “ “ “	26 cm.
External conjugate	17 cm.
Internal “	8 cm.

Several ineffectual efforts were made at different times to produce cephalic version by external manipulation. My opportunity seemed to have arrived at last when I was summoned to see her on June 16, 1894, at ten o'clock in the evening, with the message that the bag of waters had ruptured and the cord and one arm were in the vagina.

Examination revealed the head in the left iliac fossa, the funis prolapsed and the left arm in the vagina. The cervix was but little dilated and the pulsations of the cord were feeble. The patient was etherized, the arm and cord replaced and the head brought down to the pelvic brim, above which it remained freely movable. I decided to give time for dilatation of the cervix and, if the case still proved a suitable one for the operation, to sever the symphysis. When I saw the patient again in three or four hours my disappointment was great to find that the infant was dead. The os was at that time about half dilated and the head still disengaged. Ether was administered again, podalic version performed, and by traction and strong suprapubic pressure, I managed to deliver a child slightly under average size.

Thus ended this labor, but my consolation was the thought that unusual cases come in pairs or triplets and experience led me to look for another soon.

It occurred that same morning when Dr. Luce called for me to see with him a case on Capitol Hill that had been in labor forty-eight hours. He had been called in consultation a short time before and recognized that the labor presented unusual difficulties. The woman was a primipara, aged twenty-nine, of English birth. Labor began on Friday morning, June 15th, and the pains had been so severe that she obtained no rest on that or the following night and had taken scarcely any nourishment. When I saw her Sunday afternoon, the 17th, she was under the influence of a pint of brandy that had been given during the morning.

Examination as follows :

Palpation : Head movable at the brim, plane of dorsal resistance on the right side, foetal extremities on the left.

Auscultation : Heart sounds of foetus on the right side and slightly below the umbilicus. Position, R. O. A.

Vaginal examination : Parts soft and dilatable, cervix dilated,

membranes ruptured, head high and freely movable above the pelvic brim.

Pelvic measurements :

Distance between anterior superior spines	25 cm.
“ “ crests of the ilium	27 cm.
Baudelocque's diameter	17 cm.
Internal conjugate	8 cm.

The disproportion between the head and pelvic canal was evidently so great that the child could not be brought through alive by forceps or version.

Craniotomy was set aside as unjustifiable on a living child. Cæsarean section and symphysiotomy remained. The latter was chosen and preparations immediately made for the operation. Ether was administered, the field of operation rendered aseptic and everything done to make the operation as nearly so as was possible in a private house and under the disadvantages of hasty preparation. The usual incision was made over the symphysis and the joint exposed ; the urethra was pushed to one side by a male sound and the joint severed from behind forward, and below upward with the Galbiati knife. Some difficulty, owing to resistance of the parts, was met with at the upper part of the joint. As soon as the incision was completed the bones separated with an audible snap although the precaution had been taken to support the hips. The effect was immediate and the head settled in the pelvic inlet. The maximum separation of the joint was about six centimetres and the consequent stretching of the parts caused laceration of the subjacent tissues including about half an inch of the anterior wall of the urethra. The resulting hemorrhage was profuse and parenchymatous. So free was the outflow of blood that efforts to extract the child were temporarily discontinued until the bleeding was controlled by ligatures *en masse*.

Tarnier's axis-traction forceps was applied and the infant delivered without difficulty. Laceration of the perinæum was averted by episiotomy. The anterior wall of the urethra was sutured with fine silk, the incision sewed with silkworm gut, and the joint held in apposition by a broad strip of adhesive plaster encircling the pelvis.

In the subsequent history of the case there was recorded some fever which required intra-uterine douches for a few days. The wound healed except at the upper stitch a slight discharge of pus revealed a sinus behind the symphysis leading down to an opening in the ante-

rior vaginal wall. This was kept syringed out and finally closed completely. The pubic joint was firmly reunited except for a small gap at the under surface. Slight mobility produced a waddling gait for a while but later it disappeared and now the patient can walk long distances without inconvenience and she has even indulged in dancing. There is still some bladder irritation manifested by inability to retain the urine for any length of time.

The infant breathed promptly, was well developed and weighed nine and three quarter pounds. Head diameters gave the following measurements :

Suboccipito-bregmatic.....	93 mm.
Occipito-frontal	11 cm.
Biparietal.....	93 mm.
Bitemporal.....	68 mm.
Occipito-mental	13 cm.

During the extreme heat of the summer it died from an acute attack of entero-colitis.

At the present time, it is out of place to offer any plea for the performance of symphysiotomy in cases of minor pelvic contraction, where the disproportion between the foetal head and pelvic canal is too great for safe delivery of the child by forceps or version. The field of the operation may be extended to embrace cases of unrotated occipito-posterior positions and face presentations with the chin remaining posteriorly. These are indeed the very class of cases that formerly gave excuse for the revolting practice of craniotomy upon the living child—a practice which even yet some uphold. Only recently have I heard of a case in our midst where the child was destroyed because the labor was said to be one month overdue and the ossification of the bones of the cranium was unusually advanced. The infant lived three days with the occipital bone crushed and one ear cut off.

The average maternal mortality of a large number of operations performed by different men has been placed at twelve per cent. This seems much too high.

In a private communication from Dr. R. P. Harris, dated September 10, 1894, he says : " There have been but two deaths out of the last thirty-five symphysiotomies in the United States." This is less than six per cent., and with experience and improved technique the death-rate should be still further reduced until the danger of symphysiotomy would be no greater than that of version or the high forceps operation.

Hæmorrhage, which occurred in this instance, has proved a serious complication in quite a number of the reported operations and in some has resulted fatally. To avoid this Dr. M. L. Harris,* of Chicago, has pointed out the importance of detaching from the arch of the pubes the deep layer of the deep perineal fascia. The failure to do this is, I believe, as he claims, the cause of the lacerations of the soft parts, and the resulting hæmorrhage. I am sure it was so in my case and I regret his article was not published soon enough for me to have taken advantage of his suggestion.

Of the two methods of operating—the open, or the so-called subcutaneous incision—I greatly prefer the latter, believing it entails much less danger from hæmorrhage and sepsis.

Finally, it is necessary to make the operation aseptic and elective to obtain the best results and reduce the mortality to the lowest possible figure.

CASE II. *Elective Cæsarean Section.*—The term elective is employed in the sense that the Cæsarean section was deliberately performed as an operation of election and the time selected for operating was before the onset of labor. The history of the case is briefly as follows :

Mrs. P., married, twenty-five years of age, born in Virginia, pregnant for the first time. When fourteen years old necrosis of the right iliac bone developed and she has suffered since with discharging sinuses. Collapse of the right iliac bone has shortened the right lower limb and she walks with a decided limp.

Menstruation recurred regularly until November 7, 1893. Pregnancy was normal and I saw her for the first time August 12, 1894—just two days before the calculated time for labor to come on. Having obtained the aforementioned history, I examined the case *per vaginam* and found the collapsed iliac bone had entirely obliterated one side of the pelvic canal—the wall on that side passing directly backward in a line with the symphysis pubis.

Version, forceps, symphysiotomy, were out of the question. The choice was between craniotomy and Cæsarean section, and the child being alive, the latter seemed the only justifiable procedure.

Wishing to operate before the onset of labor which was expected so soon, the patient was sent to Garfield Hospital the next day, August 13th, and prepared for operation on the 14th.

Examination after admission gave the following measurements :

* *American Journal of Obstetrics*, December, 1894, pp. 758-768.

Distance between anterior superior spines.....	22 cm.
“ “ crests	27 cm.
Baudelocque's diameter	19 cm.
From umbilicus to right anterior superior spine..	16 cm.
“ “ “ left “ “ “	20 cm.

The foetal head was movable above the pelvic brim ; child's back to the right side and anteriorly. Position, right occipito-anterior.

Foetal heart sounds 120 ; to the right and below the umbilicus.

The patient was thoroughly prepared by antiseptic baths and douches, and brought to the operating room the next day at 11.30 A. M. No labor pains had come on. The abdomen was opened by an incision beginning one inch and a half above the pubes and ending two inches above the umbilicus. The uterus was lifted out of the abdominal cavity and protected by towels wrung out of hot sterilized water and a rubber protective was drawn around the cervix to prevent blood, fluids, etc., from entering the peritoneal cavity. The placenta proved to be attached to the anterior wall and was directly in the line of the uterine incision. One side was quickly separated, the membranes ruptured and the child extracted. Hæmorrhage from the uterus was not great and was readily controlled by manual compression and a rubber tube which had been previously passed around the cervix. The placenta and membranes were peeled from the cavity of the uterus and the organ promptly contracted under the influence of hot water poured upon it. A hypodermic injection of one tenth of a grain of ergotin was administered.

The cavity of the uterus was douched out with hot sterilized water and a strip of iodoform gauze was passed down through the cervical canal into the vagina. The uterine wound was brought together with deep and superficial silk sutures. The deep sutures, seventeen in number, passed down to the endometrium ; the superficial, fifteen in number, of finer material, approximated the peritoneal covering.

Both Fallopian tubes were ligated in the outer third in order to produce sterility.

The uterus was again washed off with hot, sterilized water, replaced within the abdominal cavity and the omentum drawn down over it. The time required up to this point of the operation was thirty-three minutes.

The abdominal wound was closed with twenty silkworm-gut sutures and a few superficial sutures of fine silk, dressed with iodoform gauze and firmly bandaged. Patient stood the operation fairly well, and at

its completion her pulse was 130. Two hypodermics of strychnine, gr. $\frac{1}{60}$ each, and one of brandy had been given.

When the baby was removed it breathed promptly, but respiration soon stopped and Dr. W. S. Bowen, who was in charge, had some difficulty in re-establishing it. The child was a girl and weighed 6 pounds 13 ounces. At present she is alive and thriving.

The patient recovered from the anæsthetic well and had no nausea or pain. The bowels moved by enema on the third day. On the eighth day the temperature rose to 102° and caused some anxiety until it was ascertained to be due to a suppurating point on the iliac bone. This was opened freely, washed out, and packed with iodoform gauze and the temperature became normal. Her further convalescence was uninterrupted.

The advantages of performing Cæsarean section before labor comes on, when all arrangements can be made leisurely and orderly are too apparent to need argument. The objections raised against it are : fear of hæmorrhage from imperfect contraction and retraction of the uterus, and retention of lochia due to deficient drainage through the undilated cervical canal. Dr. H. C. Coe* read a paper before the American Gynæcological Society in which he reported two successful cases and urged the importance of operating before labor. To show the opposition to so doing he quotes from Dr. T. G. Thomas as follows : "It is a matter of the first importance that the operation should be performed, not before nor after ; but during the first stage of labor. Before full establishment of this, and after escape of the liquor amnii, the chances of success are frequently diminished."

In the discussion which followed, Dr. W. T. Lusk said the method had commended itself to him until he read the report of two cases that died from hæmorrhage, and the fatal result was attributed to having done the operation before labor began. He added : "In view of this experience I would in the future prefer to rise at night, get together my assistants, and put up with such inconveniences, rather than undertake the operation before the commencement of labor with a risk of hæmorrhage."

Dr. H. J. Garrigues stated : "As to the question of elective Cæsarean section, I share the view of Dr. Lusk. I would not have the courage to cut into the womb before labor pains had begun." These fears, I believe are unfounded. As soon as the uterus is incised and partly evacuated it contracts promptly. No more conclusive evi-

* *Transactions*, vol. xvii, 1892, p. 87.

dence can be brought forward than to give the unparalleled results that have been obtained by this mode of procedure. Dr. Harris is my authority for the statement that sixteen of these operations have been performed in the United States; saving fourteen mothers and sixteen children. What other series of cases can show such result? This alone refutes all objections urged on theoretical grounds against operating prior to the onset of labor. The second objection—that there is danger of retention of the lochia—is, I believe, better founded. I have already reported a case operated upon during the first stage of labor when the cervical canal admitted the index finger.* The canal afterward contracted, the lochial secretion was scanty and foul-smelling, and on the fifth day the temperature went up to 101.5. The cervix was dilated with steel instruments, the cavity of the uterus explored with a dull curette and then irrigated with a two-per-cent. solution of carbolic acid. The effect was to bring the temperature down, and the patient then had an uneventful convalescence.

This complication can be avoided by dilating the canal with an instrument passed from above down into the cervix and then inserting a drainage-tube or, as I did in my last case, by passing a strip of iodoform gauze from the uterine cavity down into the vagina.

The ligation of the tubes to produce sterility has a distinct advantage over removal of the tubes and ovaries. In the first place it secures the object sought just as effectually. It does not unsex the woman in the sense of producing the menopause, and finally it is less dangerous as there are no ligated stumps that might give rise to subsequent hæmorrhage. The objections against it are theoretical, and until it can be proved that the distal end of the tube gives subsequent trouble, I think it should be employed in preference to removal of the appendages or uterus.

CASE OF HYSTERECTOMY BY LIGATION FOR FIBROMA.†

BY GEORGE ERETY SHOEMAKER, M. D.,
Gynecologist to the Methodist Hospital.

The tumor shown was removed after months of electrical treatment which did no good. As the patient spent six months at two

* *Transactions of the American Gynecological Society*, vol. xv, 1890, p. 387.

† Read before the Philadelphia Obstetrical Society, April 4, 1895.

intervals in a private sanitarium it is reasonable to suppose that the electrical and other treatment was thoroughly given. It caused much pain, however, the loss of blood was not lessened and the tumor grew. The advice of the electricians to continue treatment was therefore disregarded and the patient came to Philadelphia for surgical advice.

She was thirty-seven years old, married seven years, one miscarriage, at five months and a half five years ago, with poor recovery, but no inflammatory complications. Periods lasted six to ten days and were free enough to exhaust from drain, though they were often delayed one or two weeks. The exhaustion of one period was scarcely recovered from when the next was due. There was moderate anæmia, no loss of flesh, a loose cough which had lasted six months, no lung consolidation, but the sputum showed tubercle bacilli. Occasional chilliness and perspiration with some hectic were noted. The tumor present was undoubtedly fibroid, and while developing from the posterior wall, could not be separated from the uterus, which was buried in it. It was freely movable and rose with the filling of the bladder to the umbilicus, sinking forward and two inches lower when the bladder emptied. This rising of the fundus was brought about in this way. The cervix was long and extremely flexible, so that when the bladder was empty the globular tumor (which was shaped like a symmetrically enlarged uterus at the sixth month of pregnancy) would fall forward, doubling backward the flaccid cervical segment. Vaginal examination now showed the tumor in contact with the anterior vaginal wall. On injecting the bladder with boric-acid solution, the uterus straightened, and then reached two inches higher in the abdomen, being displaced beyond reach of the vaginal finger by the distended bladder.

The condition presented the interesting problem: Given a case with incipient tuberculosis, a comparatively small fibroid causing no pressure symptoms, but with free bleeding from six to ten days, the weight and strength just maintained for one year at the verge of invalidism by constant care and repeated periods of sanitarium life, is hysterectomy advisable? Electricity had been tried and failed. Ergot had no effect on the bleeding, as usual. If the drain were removed, residence in the proper climate might cure the tuberculosis, it could not cure the tumor. Operation risks were increased by the cough, the danger of lung irritation and increase of the tubercular process by catarrhal pneumonia. The choice was in favor of hysterectomy, which was done without difficulty by the ligation method, the healthy cervix being allowed to remain. No drainage, buried wormgut sutures in the abdominal wall, which was completely closed. Good recovery fol-

lowed, complicated however, by a catarrhal pneumonia of left lung partly induced on the tenth day by chilling of the room in a great storm. At no time was there the slightest redness or irritation about the abdominal wound which healed by primary union. Vaginal examination during the pneumonia showed absence of fullness or tenderness in the pelvis. The ligatures could be plainly felt by the sides of the cervix beyond the vaginal wall. She is now coughing much less than before operation. The question of operating on patients with cough is one of some importance. There is occasionally seen a dry cough, analogous to the cough of pregnancy, which is caused by the tumor itself. The path of the reflex is through sympathetic channels from the uterine plexus to branches of the pneumogastric nerve. The pneumogastric has direct connection with the cœliac plexus, hepatic plexus, splenic plexus, as well as the sympathetic in the neck, and it is no more difficult to explain a uterine cough than an ear cough through the auricular branch of the pneumogastric. It may reasonably be expected that a cough due to the tumor will stop with the removal of the irritant, but the presence of acute bronchitis, chronic bronchitis or tuberculosis demands separate consideration. Acute bronchitis should delay the performance of the operation for a few days. Chronic bronchitis adds a little to the risk of hæmorrhage and when severe adds a considerable element of risk of hernia by constant disturbance and dragging on the wound. The cough may, however, be controlled somewhat by sedatives such as hydrocyanic acid or codeine, and it is surprising how much patients are able to restrain cough when each expulsive effort causes pain in the wound.

In genuine pulmonary tuberculosis, if advanced, operations of election are not usually justifiable. When phthisis is incipient, and the pressure of a focus of pus in the pelvis, or a tumor by its discharges removes the chance for general recuperation of the patient's strength, the intelligent resort to operation may be wisely made.

When, as in the case reported to-night, the patient's circumstances allow her to go to a climate which will cure tuberculosis, by removing the bleeding tumor first, though at somewhat increased risk, we enable her to exercise good generalship and defeat the enemy in detail.

PUERPERAL SEPTICÆMIA IN THE PRACTICE OF THE COUNTRY PHYSICIAN.*

BY JOHN MANN, M. D., JERICHO, N. Y.

Bad cases of puerperal septicæmia are, fortunately, of rare occurrence in the practice of the country physician. This is due, I believe, more because of the hygienic surroundings and constitutional vigor of his clientèle than to any especial care as to aseptic midwifery.

Cases which cause anxiety occur, however, and I report two; not that they are especially interesting *per se*, but illustrative as types of the two most prolific causes of the disease with which we have to contend—viz.: ignorant and superstitious nurses and careless practice.

CASE I.—*Bad Nursing*.—Primipara, aged thirty, delivered with forceps after a tedious labor of thirty-six hours' duration. Laceration of the perinæum, first degree, not sutured. The patient's condition was normal when visited the three succeeding days. An interval of three days then occurred before she was again seen, during which time she was under the care of a younger sister, as nurse, a person of little intelligence and no experience.

She had pinned the binder, the three-tailed variety, as tightly as possible, especially the part that crossed the perinæum and held the pad of carbolized cotton, thus effectually damming back the lochial discharges.

The patient was found with a temperature of 104.2° ; pulse, 125; uterus tender, relaxed, and reaching nearly to the umbilicus. As it was impossible to tell when the first rise in temperature had taken place, it was deemed best to use the curette at once.

This was carefully and thoroughly done with the usual antiseptic precautions, the bichloride of mercury (1 to 8,000) being used as the antiseptic.

Nothing especial came away with the curette beyond a few small clots and shreds of membrane, and there was no abnormal odor.

After a thorough intra-uterine douche of bichloride (1 to 8,000) a strip of sterilized iodoform gauze was loosely placed within the uterine cavity, and a pad of carbolized cotton used to collect the discharges, which was changed every two hours. She was given half an ounce

* Read before the New York State Medical Society, February 5, 1895.

of whisky, followed in an hour by a tablespoonful of the sulphate of magnesia.

A saturated solution of the magnesia was made, of which she was ordered to take one drachm every four hours, alternating with four drachms of whisky.

Temperature taken in six hours was 101.4° , and in twelve hours 99° .

The gauze was removed in thirty-six hours, and an intra-uterine douche of the bichloride (1 to 8,000) was given.

The temperature did not again rise above 100° until the ninth day, when it was 102° . An intra-uterine douche of bichloride (1 to 8,000) was used, and the sterilized gauze replaced within the uterus.

The temperature reached the normal in eighteen hours. The second strip of gauze was not removed for three days, when a thorough vaginal douche of sterilized water completed the treatment.

The care of puerperal women in the rural districts is almost wholly confined to untrained and uneducated women, usually past middle life, who have taken up the calling as a means to increase a limited income. They are often uncouth, uncleanly and possessed of that supreme assurance that so often accompanies ignorance; ever ready to give you points about the management of cases that old Dr. So-and-So told them years ago, and almost certain to put them in practice during your absence.

The nurse as well as the people have not as yet been fully impressed with the importance of aseptic midwifery, possibly from a lack of courage, on the part of the physicians, to carry out the necessary details, certainly from the lack of the fearful examples of its neglect that often occur in the more populous centers.

CASE II.—*Careless Practice*.—German woman, aged twenty-four. Second pregnancy. Came under treatment in the seventh month of gestation for a very severe attack of zoster involving the region supplied by the external saphenous nerve of the right leg, which was followed in two weeks by an abscess on the inner aspect of the calf of the same leg. This was lanced, and discharged for about two weeks when the patient was supplied with iodoform gauze and instructed to dress it herself. She was not seen again until her confinement November 21, 1894, when she was delivered after a normal labor of about twelve hours' duration without any complications beyond a slight laceration of a previously repaired perinæum which was immediately sutured and the surface painted with a mixture of iodoform and colodion (four per cent).

She did well until the evening of the fourth day when she was taken with a severe pain in the lower abdomen. Temperature was 103.4° ; uterus relaxed and very tender. In looking for a cause of the sepsis it was found that the abscess had never fully healed and had not been dressed for six days until the dressing had been removed by the nurse the third day after her confinement. As the surroundings and accommodations were such that a curetting was impracticable that night she was given a quarter of a grain of morphine hypodermically and four drachms of sulphate of magnesia.

She had several chills during the night and the next morning her temperature was 106° . The principles governing the treatment of the first case were applied to this, viz.: thorough curetting, bichloride douche and sterilized gauze drainage. The results were fully as satisfactory, the temperature falling 4° in twenty-four hours, but it remained in the neighborhood of 102° until the eighth day when it rose to 105° . The gauze was then removed, another bichloride douche given and fresh sterilized gauze introduced. The temperature was 101.4° in twelve hours after and gradually fell until the normal was reached on the eleventh day.

The drain was then removed and a thorough vaginal douche was given.

Physicians in the country of from twenty to forty years' practice are as a rule like the eminent Scotch surgeon, not very firm believers in the germ theory and although their statistics as far as fatal cases of sepsis are concerned may be quite good, I believe many of us are not so particular about absolute and perfect cleanliness. Hayseed and dust are apt to collect in our obstetrical bags unless carefully watched, and few of us, I believe, would be willing to exhibit the same before this Society as model outfits for the practice of aseptic midwifery.

The ætiology of puerperal fever, as promulgated by the authorities of the present day, recognizes little else but its septic nature and heterogenetic origin, and unless we accept these facts our treatment must be faulty and our patients in great danger.

Some may wish to classify more closely, calling these cases, in which the temperature is not so high and the evidences of septic poisoning not so pronounced, sapræmia, or the absorption of the toxins of putrefaction, and septicæmia the result of the entrance into the circulation direct of the germs themselves. While that may be a commendable division for the expert, those of us who see few cases would better leave so fine a diagnosis until the results of the cases

are more positively known and keep the one point *sepsis* constantly before us.

The ætiology being so firmly established the diagnosis ought to be comparatively easy, and while there *may* be many forms of puerperal fever, still I think the only safe rule is to assume that any marked rise in temperature occurring during the puerperium is the result of sepsis unless positively accounted for by some other pathological condition. Great reliance is often placed upon some abnormal odor to the lochial discharges. This, I think, is a very unreliable symptom. It did not occur in either of the cases reported, and I have often noticed it where no signs of septic absorption were present.

In considering the treatment of a given disease the subject of prophylaxis demands careful attention, and when the cause is thoroughly understood and its prevention made possible by proper care on the part of the attendants, its occurrence ought to be very rare indeed. This being the fact in regard to puerperal septicæmia, the physician occupies a very responsible position. The prophylaxis of puerperal fever is embraced in the practice of aseptic midwifery, which in the country districts presents, as elsewhere, many difficulties. Cases of spontaneous delivery are of frequent occurrence. The nurses and attendants are not of the best (unless, as often occurs, the physician himself performs all the duties), and births are not confined to the model country farmhouse, with its large sunny rooms and snow-white linen. The small but dirty tenement, with its foreign occupants, are very frequently in evidence, where scarcely anything but fresh air can be obtained, yet, notwithstanding all these drawbacks, hot water and soap can usually be had for the asking, and there can be little excuse for the physician himself turning the so-called physiological process of childbirth into the pathological one of septicæmia.

Instruments should be boiled or sterilized at home after use and then wrapped in sterilized towels before being placed in the obstetrical bag, and when required for use placed a few minutes in boiling water. Creoline or lysol can be used both as antiseptics and lubricants. Certainly no physician should undertake any obstetrical operation without the most scrupulous care, especially of himself and instruments; also of the patient and attendants so far as he is able to control them.

Injuries to the pelvic floor should be immediately repaired and the surface painted with a mixture of iodoform and collodion (four per cent). Should symptoms of septic absorption manifest themselves the treatment to be effective should be prompt, thorough and aseptic.

Drugs, with the exception of sulphate of magnesia and alcohol, can play but little part in its management, and the chemical antipyretics are especially to be condemned as not only useless but positively harmful.

The disease for the most part being situated within the uterine cavity, the local treatment should be directed to this point and the curette carefully and thoroughly used. The external genitals and vagina having been thoroughly cleansed, the curette is usually easily introduced guided by the fingers of the opposite hand (a speculum is not a necessity) after the instrument has entered the cavity. The other hand should be placed on the abdomen over the fundus of the uterus as a guide and the surface carefully scraped consecutively with a firm steady pressure.

The curetting is to be followed by a flushing of the cavity with sterilized water to which a mild antiseptic may be added and a strip of sterilized gauze introduced simply as a drain.

Although this is a simple surgical operation it is well to bear in mind the points made by Grandin in a recent work that "lack of asepsis will ruin the most expert technique" and "that each additional manipulation carries with it an additional risk of septic infection."

Some of our text-books, even of quite recent date, advise us to rely on the antiseptic douche, the curette to be used only upon the persistence of the symptoms.

When we know that septic absorption is taking place it would hardly seem proper to watch it for any great length of time. If it is necessary that the hands be scrubbed with a stiff brush and soap and water for five minutes and soaked in solutions of permanganate of potassium and then in oxalic acid to render *them* safe to use, what can we expect to accomplish by any simple flushing of the surface with a fountain syringe with a three-foot pressure and antiseptics of a strength that it is safe to use?

After a thorough curetting a mild antiseptic douche is advisable or better still the douche-curette where the stream is applied directly to the track of the curette; but to place much confidence in the douche itself as a curative agent would seem to be a waste of valuable time.

A second curetting may be necessary when the temperature shows a tendency to rise and is not lowered by a removal of the gauze drain and its fresh renewal. Of drugs, the sulphate of magnesia should be freely given for its well-known property of removing poisonous ma-

terial from the blood by free watery evacuations with very little irritation to the intestinal canal.

Alcohol administered in good doses at short intervals sustains the strength, retards tissue metamorphosis and is an antipyretic of value.

Is a post-partum curetting safe in the hands of the country practitioner alone and unaided as he often must be, or with such assistance as he has at his command?

It ought to be with such instruments as the Skene or the more modern douche-curette, but the ordinary sharp instrument should be used with great caution by one who is not very familiar with the difference in the feeling of pathological material and firm healthy muscular tissue.

Should symptoms of pelvic cellulitis or peritonitis manifest themselves the advice of the expert abdominal surgeon should be sought at once.

In conclusion, I believe that aseptic midwifery is not extensively practiced in the country and that it should be. That mild cases of puerperal septicæmia are of quite frequent occurrence, but are classified as milk-fever, malaria, etc. That the treatment should be surgical almost exclusively and that asepsis should be the rule and guide of our faith and practice.

A CURIOUS ANOMALY OF THE FEMALE GENITALIA WITH STRIKING RESEMBLANCE TO SOME OF THE EXTERNAL MALE ELEMENTS CONVERTED BY PLASTIC SURGERY INTO A WOMAN OF NORMAL APPEARANCE.*

BY W. A. H. COOP, M. D., LAWRENCEBURG, TENN.

About the first of last August in response to a call I visited Mrs. —, aged twenty-four, and married about ten months. The messenger, her father, informed me that she had been ailing some three or four months; that it was her mother's opinion that her daughter was probably three or four months pregnant, and that she was not like other women, and on account of this last-mentioned condition

* Read before the first regular meeting of the Middle Tennessee Medical Society, held at Nashville, Tenn., November 20 and 27, 1894.

being suspected, they were very apprehensive as they thought it would be impossible for her to be delivered of a baby, and therefore they had sought my advice in the matter. I found the patient in bed and with a temperature of 102° F., and with an expression of suffering on her countenance; to be brief, she was suffering, apparently, many of the concomitants of uterine and ovarian irritation; being very tender and sensitive over the hypogastrium and especially just above the pelvic brim and on either side of the pubis; and she had some of the reflex phenomena, such as irritable stomach, capricious appetite, constipation and morning sickness, and also pain in the summit of the head and frontal and intercostal neuralgia. She had somewhat indurated mammary glands, which she said had recently become enlarged, and the nipples were surrounded by a highly pigmented



areola, but she was menstruating regularly. Upon examination of the external genitals, I found them of the most curious, unique and peculiar appearance. Looking from below, there appeared to be an analogue of the male scrotum however, without any appearance of a raphe or labial commissure, but without testicles or any other glandular organs. Then passing forward to the front and reaching high up on the pubic bone, and extending backward about one third of the way to the anus was a faint but distinct outline of, what appeared to be, the widely spread nymphæ, and projecting from between these apparent nymphæ was the analogue of the male prepuce, three fourths of an inch in length and nearly as wide at its base and tapering toward the free extremity; and consisting of very elastic and distensible tissues, and readily admitting of the index finger to the depth of nearly

an inch and a half, at which distance the canal terminated in a narrow tract, which communicated with both the vagina and bladder, having a caliber equal to a No. 15 American measure. The prepuce and nympha-like bodies were covered with a highly pigmented epithelium, which coloring together with the outlines is shown in the photograph. The mons veneris and the entire external abnormality were covered with an abundant growth of hair, except the prepuce and nympha-like bodies and a strip about three fourths of an inch in width extending back near the anus. At the upper part, and on the inside of the preputial appendix was a tubercle, which was much larger than the ordinary female clitoris, which it proved to be. The urine and menstrual fluid both flowed through this preputial orifice. Passing my finger into the rectum, I could detect a spheroid body at about the proper situation for the uterus, and after dilating the canal from the preputial orifice, by the introduction of a succession of male sounds through it, and with my finger in the rectum, I made out a canal reaching as high as the globular body before mentioned, being separated by a membranous wall from the rectum. I then passed a silver catheter into the bladder, whose entrance appeared to be as high behind the pubis as is usually found in the male. I then administered chloroform to the patient, and after passing some large sounds, as large as No. 20 American scale, I tried to dilate the passage further with my finger, but I found the canal so firm that I could do nothing in that way. Therefore, concluding that the prime cause of my patient's present indisposition was sexual excitement with unsatisfied sexual desire, brought about by the nocturnal proximity of her fond husband, I gave orders that they occupy separate couches, and prescribed bromides, hyoscyamus, etc., and also a laxative. I told her that she needed a plastic surgical operation, and that I thought by such means, I could transmute her into a being that would have much more of the utility of a woman as well as having a more natural appearance. She seemed very anxious for the change, and consequently on the 11th ultimo, her health having greatly improved, with the kind and efficient assistance of Drs. R. H. Harvey, of Lawrenceburg, Tenn., and J. W. Maddin, Jr., of this city, I made the following plastic operation :

Having shaved the parts well, together with the surrounding hairy parts, and washing with soap and water, followed by the antiseptic sublimate solution, I commenced by making an incision along the median line from the preputial appendage back to about an inch anterior to the anus, and going only well through the skin ; I then

dissected the skin back from about half an inch in its greatest width to a very little space up near and in the prepuce. I then next passed a stout curved sound through the prepuce down to about the lower end of the line of incision I had made on the outside. I then made the tissues tight over the end of the sound, and cut down upon it into the canal and substituted a grooved director; I cut all the intervening tissues from below up through the preputial appendage, with a probe-pointed bistoury. Then Dr. Maddin and I made a digital and an ocular inspection of the underlying parts that had been hidden by the now divided structures. There was presented to view a most natural hymen, which gave way to a little force of the exploring index finger, revealing beyond it a capacious vaginal canal, and in the usual situation, the uterus. With shotted silkworm-gut sutures, passed through the margin of the detached skin, and then carrying the skin margin well down and in close apposition to the divided margin of the mucous membrane of the same side, I covered the entire cut surface with skin all the way around on either side, leaving the ends of the sutures projecting from the now labial commissure. The dressing consisted of ten-per-cent. iodoform gauze, applied next to the wound; over this, sublimate gauze one to one thousand, kept in place with a T-bandage. The dressings were changed as often as they became soiled, and the urine was drawn off with a male silver catheter; as there appeared to be a hypospadias, it proved to be the most convenient instrument for this purpose. The result of the operation has been all that could have been desired; and the patient's external genitalia have a most natural appearance, provided, a very close inspection is not made. Some of the present differences from the normal, as seen by close inspection, are the nymphæ, which were once the preputial appendage, and which are now somewhat more prominent than is usually the case, situated at the upper part of the labial commissure, and terminating or lost in the labia majora about an inch below the somewhat enlarged clitoris, which is covered with a very natural-looking hood. The hood is made up of the united upper continuous ends of the newly made nymphæ. Then again, in front of and somewhat within the ostium vaginæ, is the entrance of a canal which passes upward and immediately in front of the vagina, and readily admits the index finger to a depth of nearly an inch and a half, where it terminates in the urethra proper, and is separated from the vagina by a membranous partition. The entrance to the bladder itself seems to be quite as high as it is usually in the male. The skin which was turned into the labial commissure is already converted,

apparently, into mucous membrane, and there is scarcely a perceptible cicatrix to denote the former junction of skin and mucous membrane. The vagina itself is apparently more capacious than vaginas that have not been subjected to the wars of Venus.

March 7, 1895.—I saw the above patient on the street four days ago and she said that her health was excellent; indeed she looked as though she had increased much in flesh. She and her husband both express themselves as being highly pleased with the results of the operation.

INFANTILE SCORBUTUS.*

BY W. P. NORTHRUP, M. D.,

Adjunct Professor of Diseases of Children, Bellevue Hospital Medical College; Attending Physician to the Foundling, Presbyterian, and Willard Parker Hospitals; Consulting Physician to the New York Infant Asylum.

It is the purpose of this paper to say ten-minutes-worth on scurvy in babies, especially concerning its occurrence and diagnosis.

Causes.—In reported cases the causes have been found to be more than all other causes combined, the use of proprietary foods and condensed milk, that is, a lack of fresh food, even a small proportion of fresh milk not being sufficient to protect.† Age—nine to fourteen months; social scale—among the well-to-do; locality—oftener in the country‡.

Diagnosis.—"Rheumatism" of the legs and spongy gums are sufficient basis for naming the disease. Unusual sensitiveness on handling especially if the search seems to show that the child's legs are the seat of trouble, should cause suspicion. To confirm this diagnosis inquire into the history of feeding. Scurvy may be mistaken for rheumatism, stomatitis, rickets, sarcoma, osteitis, and infantile paralysis.

Lesion: Hæmorrhage (diapedesis) beneath the periosteum of the femora with separation (late) of the lower epiphysis; fusiform swell-

* Read by title before the Medical Society of the State of New York, Albany, February 5, 1895.

† The Bradshaw Lecture on Infantile Scurvy, etc., by Thomas Parlow, M. D., F. R. C. P., *British Medical Journal*, November 10, 1894, p. 1032.

‡ Scorbutus in Infants. W. P. Northrup and Floyd M. Crandall, *New York Medical Journal*, May 26, 1894.

ing of the thigh ; less marked hæmorrhages, subperiosteal, of the tibia and fibula ; hæmorrhage into the muscles causing circumscribed painful indurations ; into the subcutaneous tissue causing, "black-and-blue spots" notably the classical "black eye" ; into the skin (petechiæ) ; into mucous membranes showing blood in the urine, stools and vomited matters.

Hæmorrhagic gingivitis, "spongy gums," occurs regularly in cases where teeth are present ; before the eruption of teeth it is said not to occur.

Symptoms.—"Rheumatism of the legs," exquisite sensitiveness on handling, pain on motion, swelling, fusiform of the thighs (one or both).

Attitude, such as will best relax all muscular pressure upon the periosteum that is abduction and flexion.

Pseudo-paralysis.—When the leg lies helpless and straight in bed, there is complete disability due to separation of the epiphysis.*

Anæmia, sallow complexion are usually present. Scurvy is frequently superadded to rickets but seems to have no constant relation to it.

Treatment.—Correct the errors in diet ; give fresh milk, fresh fruit juices, orange juice acting favorably.

Prognosis is good. Recovery begins promptly and is complete in a short time. The writer has seen spongy ulcerated gums much improved in five days, restored to normal in ten, and disabled legs entirely well in a month.†

Gentlemen, this ten minutes is wasted if you fail from now to look for scurvy in infants in your best practice. It is the family with two Jersey cows in fresh, thick pasturage, which will have scurvy in its firstborn. These people can afford to send to the city and import proprietary food. The wrapper assures the milkless mother that these commercial angels in disguise have made up a compound which is really a little improvement on Nature.

You must not regard it a curiosity, to be found only in large metropolitan hospitals. Within two months one of my colleagues, among the ablest ten physicians in New York, with a shamefaced chuckle confided to me that he had just been to see, in consultation, a case of "rheumatism of the legs." He had prescribed sodium

* Infantile Scorbutus and its Relation to Orthopædic Practice. Henry Ling Taylor, M. D., *Archives of Pædiatrics*, September, 1894.

† Scorbutus in Infants. American cases, (first paper) *Archives of Pædiatrics*, January, 1892 ; also *Proceedings of the Am. Pæd. Society*, 1891.

salicylate, returned home, and lain down for a nap. All at once it flashed upon him—"Why, that's scurvy!"

Here is the reason for the existence of this paper.

It is a little satisfaction to the writer that with the classification of scurvy and its diagnosis, some suffering has been allayed. The pitiful state of the patient and family after days and nights of pain, the pleasure of a bright prognosis, the rapid cure, have been the burden of many a communication from physicians as well as friends. There are two things in a physician's work which may call out the word "miracle." One is intubation and instant relief from suffocation, another is scurvy's cure.

Memoranda.—Scurvy occurs in good-class country practice.

Scurvy untreated, is a frequently fatal disease.

Scurvy needs first of all a diagnosis.

Scurvy treated makes prompt recovery.

Diagnosis.—If the mother says "rheumatism" of the legs, and you find spongy gums—*that's scurvy!*

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EDITORIAL.

THE BUFFALO MEDICAL JOURNAL.

It is with interest that we learn of the Semi-Centennial Anniversary of our esteemed contemporary, *The Buffalo Medical Journal*. Its editor announces, as a fitting celebration of the event, an increase in size of the *Journal* and consequent added efficiency. It is rare that a medical periodical successfully weathers the gales of fifty winters and such an one may look back with just pride over the many years of good work, which it has been enabled to perform for humanity.

It is with heartiest good wishes and the hope that the *Journal* may live to see many happy returns of this birthday that THE AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL tenders its congratulations.

THE IMPORTANCE OF A STANDARD OF COMPARISON.

We gladly emphasize the strictures and the sensible limitations upon the foreign education of American would-be gynæcologists, suggested in the timely communication from Dr. J. L. McLaren entitled "Let us be Honest." Our personal experience, derived nearly eight years ago, fully coincides with that which the doctor expresses to-day. Both he and we continued our studies in Europe after a prolonged and thorough hospital course in this country and, therefore, went there not only with a clear idea of the sort of work we

wished to see but with an intelligent and practical knowledge of how that work was performed, in our own country, by the men whose reputation placed them in the foremost rank in the profession. We were both not only capable of forming a judicial opinion of what we saw but were also actuated by the hope of seeing a great deal very well done. Our own calm judgment, expressed after nearly a year spent, with exceptionally good opportunities, in Berlin, Vienna, Prague, Munich, London, Edinburgh and Birmingham was that laparotomy was as skillfully performed by many surgeons in this country and that plastic work in Europe was altogether inferior. This is the verdict also of Dr. McLaren to-day.

No one is so prejudiced that he will not acknowledge the great advantage of comparing one's own work or that done in one's own country with that of others whose ideas have developed upon other lines and whose performance has been affected by circumstances dissimilar to those which the inquirer has known. But it is this previous knowledge of the subject *at home*—this standard of comparison—which, we insist upon it, is necessary, not alone if benefit is to be derived by the student himself but if absolute detriment to the progress of American gynæcology is to be avoided, so far as his personal influence upon his return, by his pitiful ignorance, can affect this.

As Dr. McLaren points out, the majority of those American students who are capable of forming a judgment are united in the conviction that the advantages of a post-graduate course of study in Germany over such an one in America is purely apocryphal; their objection to announcing this conviction with the same love of truth and justice, which characterizes our correspondent, scarcely redounds to their credit.

The injury which the callow, half-baked, diplomaed, American medical student abroad has wrought upon the reputation of his profession in his own country is almost incredible to one who has not observed him, as we have, upon his course of blatant ignorance in his chosen field of labor. With a smattering of theory but boldly assuming a complete knowledge of the status of every branch of medicine and surgery as practiced here, the American recent graduate announces authoritatively such astounding limitations to our medical knowledge (as observed by himself) that the useful and non-committal "*So?*" of his astonished hearers is soon felt to be quite inadequate in expression. The emotions of our esteemed German brethren seem divided between wonder at the colossal ignorance of the profession at large in this country and admiration of the good

sense displayed by him who escapes from the medical darkness of America to the fountains of pure knowledge abroad. Either a lack of sense of humor or that ingenuousness which is essentially German prevents his hearers from realizing what a gigantic fraud our average recent medical graduate abroad generally is. German medical men are not, as a rule, much given to reading the writings of foreigners; their patriotism strongly inclines them to be satisfied with their own (an example we might well take to heart), and indeed a conscientious devotion to their own medical literature would scarcely leave time for much from abroad. They are, therefore, much inclined to give credence to the fairy tales brought to them by Americans whose ignorance allows full play to the imagination. To his credit be it said that it is incomprehensible to a German—as it is to a man of every nationality but our own—that one would deliberately lie about and belittle the work of his own countrymen.

A few examples of types, not of isolated instances, of the American recent graduate in Europe, where we knew him, will give our readers some idea of the great national benefit these persons have been during the past ten or fifteen years. While visiting Prague a well-known "*privat-docent*" asked us why we never used the forceps in America. I intimated to him that I considered his question decidedly facetious, but he gravely informed me that he had been assured by an American who had recently taken a course of obstetrics in the hospital and who claimed to have had personal knowledge of the methods of practice of all our great men here, that we not only never used the forceps but were entirely ignorant of its use. This young man expressed gratitude that he had been led to seek knowledge in a country where this wonderful instrument was known. This story is literally true. Another instance is that of a man whom we knew very well in Vienna. He met us one day in the street and said he had just seen some wonderful work in the pathological department of the hospital. His face was aglow with enthusiasm and it did not take long to obtain from him the cause of his admiration. He informed us that he had seen the *whole backbone of a cadaver sawed vertically in two, opened and the spinal cord extracted entire; also, that the skullcap had been removed with equal success and the unmutilated brain removed*. "There's no use in talking," he concluded; "these Germans are wonderful fellows. They know so damn much. I told them that I meant to teach our men over there how to do that work, when I went back; it was something we ought to know." This was too much even for us, who

had become rather hardened by that time. We gravely congratulated him upon his "find" and passed on.

We were assured by many instructors that in all the courses the American post-graduate students had to be taught the most elementary details not only of practice but of theory as well, and great surprise was expressed that we were familiar with the use of the female catheter, although we confessed to having spent three years as interne in American hospitals previous to our visit. Few of our students, we were told, had ever seen a case of labor and fewer still had ever made a digital examination, although they announced their intention of returning to America, after six months or a year, *to practice gynæcology as specialists*. What a theme for a medical Mark Twain!

Of course foreigners do not know that our good men rarely visit the hospitals of Europe until they have served an apprenticeship in some one of those in their own country; they naturally attribute such pitiful exhibitions not to the ignorance of the "half-baked" whom they see but to that of the whole American profession, whose representatives and pupils these persons claim to be. These and other instances of our national tendency to foreign "boot-licking" undoubtedly account for the small esteem in which our European brethren in general hold us and also for the extraordinary ignorance of original American work so frequently displayed by them, especially in giving credit for priority in gynæcological procedures.

When will public opinion put a stop to this foreign-student fraud? For years, as we all know, many men have traded upon the momentous fact of having spent a few months with "*Geheimrath So-and-So*" or "*Mr. So-and-So*" to claim especial distinction over their fellows who have preferred to obtain substantial knowledge in this country. Nine tenths of these fellows have never seen more than the polished top of the revered professor's head from the benches of a classroom or, at most (for "cheek" is not wanting to such as these), they have forced five minutes' conversation out of him, consisting of "*So!*" on the Professor's part and fulsome flattery and American information on that of the student—with what benefit to the latter's Alma Mater we have already shown.

Rather than as a distinction it should rest as a suspicion upon any man that, after graduating here, he has gone to study abroad before he has served an internship in a first-class American hospital. Such a man is an outrage upon the intelligence of foreigners and a slur upon our own. No words are too strong in which to condemn this practice.

No, let us keep our boy graduates until we have knocked some American sense into them or, if they are too impatient to gather foreign laurel leaves, may they be mercifully induced to weave and wear their wreath permanently over there, for the delectation of the foreigner, and we be spared their return.

CORRESPONDENCE.

ECTOPIC GESTATION.

A Living Fœtus at Twelve Months ; Report of a Case.

KNOXVILLE, TENN., March 15, 1895.

To the Editor of the American Gynecological and Obstetrical Journal :

SIR : On February 2, 1895, I was called to assist in a very difficult case of obstetrics, by Dr. Reed. Upon arrival, I found the patient, a mulatto, aged thirty-eight years, weight one hundred and thirty pounds, previous history good, in her seventh labor. The preceding pregnancies were without event. At the time I first saw her she had been in labor for ten days, during the first eight being attended by a "midwife." She was very weak, pulse 120 and intermittent.

The last menstruation occurred in February, 1894, the usual symptoms of pregnancy following in normal succession. In May, 1894, patient fainted, followed by collapse, after which there was a sanguineous discharge from the uterus, lasting six weeks and gradually subsiding. Patient regained her normal health and attended to her household duties without inconvenience, though expecting termination of gestation in October. Labor, however, did not begin until January 23, 1895. On February 2, digital examination revealed a flabby uterus, the os dilated to the size of a dollar, no membranes protruding. Inserting the examining finger into the womb, it was found to be empty, save a small amount of a gelatinous substance, and the organ was extremely anteflexed. External palpation showed a large, irregular, hard tumor, in which could be fairly well outlined the form of a fœtus, the head lying in the right hypochondrium, the foetal heart being *doubtfully* audible with the aid of the stethoscope. Strange to say, the breasts showed no signs of pregnancy. They were flabby and not nearly so well developed as in the average non-pregnant multipara. Despite the condition of the breasts, the diagnosis of abdominal gestation was

made and immediate laparotomy urged as the only remedial measure. Gaining the husband's consent, one hour later, with the assistance of Dr. F. B. Powers, Dr. C. E. Ristine and Dr. H. P. Coile, in the presence of many other physicians, we began the section. The patient stood chloroform very well and the tumor was soon brought into view, and the diagnosis confirmed as to condition and position. The child was delivered head first and found to be a large, well-nourished, well-formed, live female. The placenta was attached to the right posterior surface of the uterus, and, with proper care and precautions, was removed with comparatively no hæmorrhage, the cavity douched with distilled water and the wound closed and dressed antiseptically. The patient recovered from the anæsthesia and lived eight hours, dying from exhaustion. Unfortunately, the child, a living tribute to modern surgery, also expired.

I report this case mainly to call the profession's attention to the long period of gestation. The attack in May, 1894, was evidently due to the rupture of the right Fallopian tube, in which the conception must have taken place.

I need not refer to that most unfortunate evil—the practice of midwives and the injury they do the public—in the brief space allotted to me here; suffice it to say, had no midwife seen my patient, and the operation been done when labor began, I can but believe that both mother and child would be living to-day.

J. M. BLACK, M. D.

LET US BE HONEST.

SAGINAW, MICH., *April 8, 1895.*

To the Editor of the American Gynecological and Obstetrical Journal :

SIR: It is the common and ever-increasing ambition of the American physician to go abroad to study, feeling that the demands of his patients and the custom of his profession make it obligatory. He goes expecting that the men he sees and the work they do are superior to anything found at home. This feeling and belief has been a part of his education. The college lecturer quotes Europeans and refers to the Old World for proofs of his assertions; in medical societies and meetings we are constantly confronted by "What I saw abroad," until the idea prevails that Europe is the center of all knowledge.

I know of no greater mistake that a student or physician could make than to go abroad for advanced work, before visiting the post-graduate schools of his own country, first, because he is in no position to make a comparison; second, his high opinion of himself would not permit of his doing so on his return, and, as a result, he would be always ignorant of the good work and opportunities obtainable at home, thus adding one more to the list of "What I saw in Europe." I have no doubt but that there are many men in the city of New York who have never seen their neighbors operate but cross the ocean yearly to see the same operations done by men who do them no better and, in many instances, not so well.

It is not my purpose to discourage this laudable ambition—for comparison and interchange of thought are always wholesome—but I do wish to show the relative advantages between the work in Europe and that at home from, at least, one point of view.

The European physicians are, as a rule, unusually courteous and hospitable and I shall ever remember them for their kindness. They are justly entitled to their reputation for thorough schools and teachers, for their original work and investigation but, while we give due honor to them, let us be honest enough to recognize the true worth and genius of our own surgeons and teachers.

No other country, so far as I could see or learn, offers such advantages for post-graduate work as our own, where a study has been made of the wants of the men coming, as they do, from different parts of the country. The work has been concentrated and systematized, an effort made to put reliable men on the staffs and to furnish invitations to see the best operators of the city, whether members of the staff or not. A stranger may enter any hospital in our large cities and learn, with the greatest ease, when and how he can see operations in the city; while in Europe it is with the greatest difficulty one learns of operations and with equal difficulty that one's gets from place to place, without much loss of time, on account of lack of rapid transit.

Now, after having followed the work both at home and in Europe, I claim, without fear of contradiction, that the man who wants general surgery can see just as good at home and, for abdominal or plastic, I believe much better.

This opinion was universal among all Americans I met in Europe, but I am sorry to say the majority of them thought it policy to say nothing on their return, thus leaving that false idea that is too commonly fixed in the minds of American physicians—that all superior knowledge grows abroad.

J. L. McLAREN, M. D.

THE DRAINAGE-TUBE IN PUERPERAL INFECTION.

63½ WHITEHALL STREET, ATLANTA, GA.

To the Editor of the American Gynecological and Obstetrical Journal :

SIR : At this opportune time while surgical measures in puerperal infection are being so freely discussed I desire to present a plea in behalf of the use of the soft-rubber drainage-tube in these conditions. Having tried its efficacy in a number of cases extending over a period of several years I am fully convinced that its use coupled with cleansing and disinfection of the uterine cavity is the most efficient plan of treatment and method of drainage in cases of infection occurring after labor. I am also fully convinced that its timely, persistent, systematic, proper use will save more lives than abdominal section or vaginal hysterectomy.

In making this statement I do not wish to decry or obstruct the advances of surgery in this line of work—far from it—for treatment and surgery each has its field of usefulness in these cases.

While I advocate heroic surgical measures in these cases, when the conditions and circumstances demand it, yet I feel it is our duty to save life by the simplest means possible and with least risk to our patient. Not only should life be saved but every organ of the body should be so preserved as to perform its functions afterward if possible. For this reason I strongly urge the proper use of the drainage-tube.

In cases of abortion or infection afterward I use and advise thorough emptying of the uterus, irrigation, disinfection and the gauze tampon. Here the gauze tampon is most efficient and meets all the requirements because the uterus is small, readily contracts and is easily drained of liquid contents, there being little if any solid elements to be thrown off. By the use of the gauze drainage and hot vaginal douches involution takes place rapidly.

Infection after labor at or near full term presents different conditions to deal with, the uterus is large, flabby, relaxed and will not drain itself although the os be patulous, does not contract readily leaving a large 'placental site, and large venous channels open favoring absorption and preventing involution. In all these cases whether it be putrid, septic or mixed infection the uterus contains material which should be eliminated. As to the method of getting rid of this material eminent authorities differ. (See April issue of this JOURNAL.)

In these cases it is important we keep in view the variety and severity of the infection as well as investigate the contents of the uterine cavity. I can not conceive how any physician can object to the removal of putrid placental tissue from the uterine cavity when we know that it is the ptomaines or putrefactive alkaloids that are absorbed and not the germs.

While this putrefactive material remains in the uterine cavity it is constantly adding fuel to the fire. To remove it is to get rid of the cause and the only rational method of procedure whether it be by irrigation, finger, curette forceps or curette, adapting the method best suited to the individual case and dexterity of the operator.

In septic infection the conditions are different—the entrance, development and absorption of germs with their alkaloidal developments are the cause and the curette should be used with extreme caution. Yet if the uterus contains placental tissue or blood-clots they form hotbeds for germ development and should be removed by the simplest method possible, avoiding injury to the endometrium which forms in many cases a barrier to the entrance of germs. To empty the uterus in all forms of infection, first dilate the cervix and hold it open with dilators then wash out all material possible with a disinfectant solution, after which remove the contents of the uterus by the method best adapted to the individual case irrigating again and follow by disinfection and drainage.

Drainage is the most essential factor in these cases and should be so conducted as to carry off fluids, germs, pus cells and small particles of degenerated endometrium, blood-clots or other *débris*.

Gauze drain can meet but one of these requirements—draining off fluid—while the drainage-tube properly used meets all and drains off the fluid more readily than gauze. It is to these solid elements as well as the fluids we wish to give free exit and even the drainage of fluids is obstructed by the gauze if it be packed tightly in the cervical canal or near its entrance. A practical test of the drainage-tube properly used will certainly convince the most skeptical. I have a case of infection now convalescing which I saw ten days after confinement with a temperature of 106.5° F., the drainage-tube having saved her life. The uterus was large, flabby, relaxed, over six inches in depth with a patulous os yet filled with a purulent material that filled the vagina and speculum, running down into the tub by the side of the bed when the cervix was held open with dilators. On three different occasions this patient was so improved the tube was removed, but each time within twelve to twenty-four hours the patient

grew rapidly worse with elevation of pulse and temperature reaching as high as 104° F.

The other treatment was not changed, the use of the drainage-tube resumed and the patient gradually improved each time.

Gauze drainage was also tried in this case but failed to accomplish the desired result. As to the method of using the drainage-tube, including other treatment and the surgical measures in puerperal infection, see an article in last issue of *Medical Progress* of Louisville, Ky

R. R. KIME, M. D.

REVIEWS.

THE EVOLUTION OF THE DISEASES OF WOMEN. By W. BALLS-HEADLEY, M. A., M. D. (Cantab.), F. R. C. P. (Lond.), Lecturer on Midwifery and Diseases of Women at the University of Melbourne. Smith, Elder & Co., 15 Waterloo Place, London, England.

The volume before us is exceedingly interesting and well written. It is especially welcome at this time, for besides being a valuable contribution to the study of the natural history of disease together with the treatment of the same, it discusses from a medical standpoint the social problems that are at present occupying the attention of the greatest minds of our times.

The plan of the book is to show the states of the sexual relations as they have evolved in the human race and the position at which they have now arrived, and their causations and influences on woman; and to trace these influences through their progressive stages so far as they have tended in the direction of disease.

In the first chapter are discussed certain laws of propagation which obtain in man and woman as in all nature. The first is the instinctive desire of union of the male and female generative cells, the spermatozoon and the ovule, and the second the influence of environment on the laws or customs regulating the mode of such union.

In this brief chapter the author relates the history of the relations between man and woman from the earliest ages and the influence of environment. In the earlier times polyandry and daughter destruction, combined with prevention of pregnancy, were instituted for reasons of war and food supply. Polygamy and concubinage ensued from increased power, access of wealth, sensuality and from need of population for tillage but generally combined in a tribe with the sale

or destruction of daughters or prevention of pregnancy for economic reasons. As all of these people have thought their sexual relations moral, the author concludes that "morality is the expression of the opinion of the age on the condition of the sexual relations as they have evolved according to the environment."

Chapter second is devoted to the influences of civilization on the sexual relations and on woman.

Marriage is defined as "the formation of a unity, a perfect whole, a complete sexual body, able and willing healthily and happily to perpetuate the race."

Woman's work is to perpetuate the next generation and to maintain its vitality and further development and the well-being of her husband.

Man's business is to complete sexual unity and to provide sustenance bodily and mental for these two halves and the product of their union.

With progressive civilization and education came increased essentials and still greater desires of living. The load of supplying these increased requirements has fallen chiefly upon man so that the life of him who provides for and educates his family is one of toil and anxiety; while the disposition of the average bachelor is toward less work and longer periods of relaxation.

The author adduces evidence to show that marriages are less frequent and are contracted later in life; that the number of children per marriage is getting less; that a large and increasing number of women live in concubinage; that there is an increasing ratio of illegitimate births; that an undue number of children die, and that child neglect or murder is increasing. In regard to the physical condition of our women the author says: "The selection of the fittest has resulted in a race of women of such extraordinary physical growth and beauty as has probably never before existed; but whose sexual growth is liable to be so affected by mental culture, mode of dress and delayed or non-marriage that never before were uterine abnormalities of development, disease and difficulty in parturition so prevalent. How strange, absurd and sad to find a fine apparently perfect woman with a little feeble uterus, in many cases incapable of impregnation and that one out of nine can not produce her child without lacerations, misplacements and evolving diseases! While the developing brain of man is probably increasing the size of the head in birth, the normal capability of parturition of women is decreasing."

The author does not consider the future of "the coming woman."

particularly brilliant, for in conclusion he says that while the condition of women and marriage continues to evolve the indication is that a large number can not marry and must be unsexualized, in this respect resembling the condition of certain republics of ants.

Chapter third is devoted to a careful study of the development of the female sexual organs. Minot's *Human Embryology* is freely quoted.

A chapter is devoted to gonorrhœa and another to "the granular os." We believe that more attention is paid to the latter than its importance demands.

The chapter on laceration of the cervix uteri is well written and the importance of Emmet's operation for its repair is recognized and duly set forth, but the author belittles the difficulties that attend its proper performance.

The description of the laceration of the perinæum is very intelligent and is profusely illustrated with excellent cuts; but why Tait's operation should be recommended to repair the injury we can not conceive.

The chapters on peritonitis, pelvic cellulitis, and diseases of the Fallopian tubes are unusually interesting and instructive.

The volume is attractive in size and appearance and is a valuable addition to a medical library.

G. H. M.

THE YEAR-BOOK OF TREATMENT FOR 1895. A Comprehensive and Critical Review for Practitioners of Medicine and Surgery. In one 12mo volume of 501 pages. Philadelphia: Lea Brothers & Co., 1895.

The usefulness and value of the *Year-Book* to the busy practitioner who wishes with a minimum of trouble to keep himself abreast of progress, in all that relates to the treatment of disease, is too well known to need comment.

Its object is to supply a concise epitome of what the authors consider the chief articles of the year with a short criticism of the more important subjects.

In this issue the general plan adopted in previous editions has been adhered to. The only changes are that the section of diseases of the heart and circulation has been undertaken by Dr. Coupland, that of general surgery by Mr. William Rose, and that of public health and hygiene by Dr. Whitelegge.

To say that the present volume is up to the standard set by the previous issues is to commend it.

G. H. M.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE
COUNTY OF NEW YORK.

March 25, 1895.

The *President*, EGBERT H. GRANDIN, M. D., in the Chair.

Dr. HENRY C. COE presented the following paper :

Acute Localized versus Diffuse Peritonitis in Women from a Clinical Standpoint. See page 562.

DISCUSSION.

Dr. PRYOR: I am entirely unprepared to speak on this paper, and it is exceedingly hard to discuss a paper which is so general. I take issue first with the idea of calling peritonitis a disease. It is merely a symptom associated with other symptoms. Peritonitis is an effort on the part of Nature to shut off an infection and to check an invading process; and the more peritonitis a patient has the better off he or she is. The reason why peritonitis occurring in one locality becomes general and in another locality remains entirely local, is because in the latter there is a possibility of the lymph effusion shutting in a certain process. Therefore, if we will look at peritonitis simply as an exponent of a certain infection, which is to be met by attacking the cause, I think we can devise some method of treating it. So then, if we consider peritonitis in the light of its causation, let us take a locality, as the pelvis, with which I am more familiar than with any other part. When a physician sees a case of pelvic peritonitis, he can then resort to certain means which will remove the cause of this peritonitis and not allow the infection to run riot. There is no reason why the abscess or localized process should not be opened or free drainage of the uterus secured, as the case may require.

Peritonitis occurring after a surgical operation, I agree with him, is not to be met by surgical means or interference. The surgical operation added to the secondary process will rob the woman of any chance for recovery.

Let me emphasize my statement that the symptom effusion of lymph or of serum or the resultant pus, is just as much a symptom as pain, tympanites, rapid pulse, constipation, or fever. And you are

not to treat such lymph or serous effusion as a special indication to be met any more than the fever, the rapid pulse, etc. The association of symptoms must all be treated according to the causation and the locality affected. Thus, to say that peritonitis is a disease is to say that we must treat peritonitis, wherever occurring and whatever the cause, with cold and purgatives, or poultices and opium. We get just as much peritonitis around a Mikulicz dressing as about an inflamed appendix. The peritonitis with the former is associated with an afebrile condition, whereas the latter presents grave symptoms.

In fact, the reason why lesions and infections above the brim of the pelvis are so dangerous while those below are rarely fatal is because with the former we can not get enough peritonitis of the restricting and limiting kind. To look upon peritonitis as a disease is to invite procrastinating measures and palliative treatment. The occurrence of peritonitic lymph effusion is an indication of the presence of a process which requires surgical interference. Any midwife can allow a septic salpingitis and peritonitis to continue, treating it by poultices, hot douches and morphine. A surgeon will seek the cause of the infection and stop it.

The former cause merely brings the issue to a battle between the tissue resistance and the invading process, with a result which is destructive to the integrity of the organs but which is not associated with death of the individual. The latter eludes the infection and allows repair to go on.

The general practitioner should learn to consider the symptom peritonitis as of the gravest significance and worthy of the sagest surgical counsel.

Dr. J. P. TUTTLE: The paper and discussion of the gentlemen seem to assume that there is no longer idiopathic peritonitis, that all peritonitis is developed from appendicitis or localized processes. I question very much whether we are in a position to go so far as this. There are times when we have with peritonitis fever of a low grade, with the temperature lower or higher. Those cases go on and die without showing any localized process as appendicitis, and post-mortem shows nothing to account for this general peritonitis. Now, such cases as these are not to be dealt with surgically with any great success. We have got to recognize that there are cases of peritonitis not due to appendicitis or disease of the pelvic organs, rare though they be. Another point which Dr. Coe did not mention, and a point of a good deal of importance it seems to me, is constipation, which occurs after peritonitis sets up. We often see cases of general peritonitis in which

the patient's bowels move until a certain time. All of a sudden they cease to move. You give cathartics and enemata and you get no return. This may be due to paralysis of peristalsis or to obstruction of the bowel. I have recently seen two cases of general peritonitis in which this was illustrated. After some days obstruction set in. Within a week from the beginning of the peritonitis and four days after obstruction, I operated. The obstruction to the bowels was due to peritonitis, because one loop of the small intestine had fallen down and become adherent to another forming a sharp flexion, and it was impossible for the feces to pass that bend until the peritoneal adhesion was broken up, when the tympanites was immediately relieved. The second was similar but the result not so fortunate as the child died in eight hours after operation. These were cases of intestinal obstruction, due to peritonitis and peritoneal adhesions. Another cause of peritonitis is intestinal obstruction. There are times when we have a symptom of peritonitis due to this cause, and those cases can be distinguished from general peritonitis by the low grade of temperature and the slow pulse which they exhibit, together with early vomiting and persistent tormina. Such cases should be subjected to surgical interference as soon as the obstruction is verified.

Dr. WALDO : Mr. Chairman, I did not intend to speak, but there is one very important point in this discussion to-night and it is the fact that peritonitis is a symptom or at best secondary to some other disease. When we speak about the treatment, we should make an accurate diagnosis and determine whether the disease requires surgical treatment or not and treat accordingly—the name of the paper, *Generalized vs. Localized Peritonitis: the Importance of Differentiation*—as to the importance of differentiation, I agree most decidedly with the author; but, as far as I remember the paper, he has not given us very many points. Possibly a few physical ones, and while he does not lay a great deal of stress upon the physical signs, it seems to me that if you make a careful physical examination of the abdomen or pelvis, the part which is the seat of the disease can as a rule be accurately determined, and in that manner you will be able to arrive at a closer diagnosis than by other symptoms. You may have a quick or a slow pulse, a high or a low temperature in cases which are local or in those which are general and severe; but in a great many instances these symptoms will aid you little in making an exact diagnosis or prognosis.

Dr. W. EVELYN PORTER : The most important question concerning the treatment of peritonitis is to decide whether the case must be

considered as a medical one, treated medically, or should be relieved by surgical means. I think the early study of the case of the greatest importance to the general practitioner, and the consideration of this very point is certainly of great importance. The fact that much time is lost in the treatment of peritonitis is unquestioned, and I think the fault lies with the physician. The method of quieting by opiates during the early stages, rather than treating by cathartics and enemata, and then relying upon treating the case medically or surgically, as the case may be, is a matter of great importance. When we find that these palliative measures do not yield relief and the pulse and temperature indicate that the peritonitis is continuing and the bowels are obstructed, no time should be lost and surgical means should be followed at once, even though we may not be able to trace it to any local starting point. I think a great deal of stress should be laid on the fact that in a majority of cases the temperature is not necessarily high. Not infrequently, when the practitioner finds the temperature low he considers the condition good, but the pulse is a better guide as to the severity than the temperature itself. Considering the question of peritonitis from the local standpoint, I think the study of the pus is most important, for the character of sepsis may be determined from the pus. The study of the various forms and degrees of sepsis has not been carried on sufficiently. Of course, in the laboratory and in the bacteriological institutions this has been done—I mean its application clinically, in connection with *immediate* operative work. A microscopical examination of the pus will not only aid in arriving at a correct diagnosis and prognosis but also in certain cases will influence the character and extent of surgical interference.

Dr. MURRAY: I did not have the pleasure of hearing the paper, but I thought the discussion would hinge more on the diagnosis than on the treatment, because once the diagnosis is plain that the case is a case of localized peritonitis, or that it is plain that it is general peritonitis, the treatment, I think, is pretty well settled. How are we to tell whether it is localized or general, whether it is from a perforation of the intestines or other viscus or from extension from salpingitis, or, in other words, how are we to tell when a local process becomes general through an extension of sepsis? I think the temperature has nothing to do with it. Any man relying upon the thermometer is going to fail, because it can be almost normal as well as much raised. Next, is the appearance of the abdomen an absolute guide? Not at all. In the most severe cases, even in appendicitis when there is perforation, the abdomen gives us no indication. The

first symptom is shock when peritonitis ceases to be local and becomes general. There is always an intense shock to the system. The very facies of the patients will show that there is abdominal trouble, and that it is of a serious and depressing nature. Pallid color of the facies and extreme prostration are the result of the shock. You find the effect on the pulse. The pulse may be frequent in local peritonitis, but it never has that wiry, tense feeling under the fingers which the general peritonitis shows. I think those three symptoms are almost the only ones upon which the diagnosis can be made. In ordinary pelvic peritonitis due to cold, or which we really know is due to some slight infection, you will find it strong, and you will have the thermometer, perhaps, up to 103° or 104° . You will have intense pain in the thighs, in the region of the kidneys, and in the back, which does not show general peritonitis. In general peritonitis the pain is diffuse though more intense at fixed points. The patients can not place their finger on the point but it is all over the abdomen. In localized peritonitis from appendicitis where the perforation has been gradual, you find a circumscribed tumor most frequently, or find a tumor of dull diffused hardness, which can be felt on depression. A light percussion will bring out resonance of the colon, but a deep percussion will bring out the dullness due to the underlying solid mass.

Dr. SKINNER : The delegate from Kings County came down here to get information and not to give any. I have seen within a few days a case of appendicitis where there has been no pain up to twenty-four hours of the operation. It was one of long standing, of more than three years of partial suffering. The operation proved that the diagnosis was correct as regards the appendicitis. I have often heard it remarked that no foreign body was found in the appendix. I want to correct that mistake. In 1858, when I attended medical lectures in Boston, a young man arrived on the same day I did, who ate heartily of baked beans. They were hard—I do not know whether they were New York or Boston. He lived three weeks. We found at the autopsy the baked beans there. I saw one other case from eating apple-seeds. We found the apple-seeds in the appendix.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

April 4, 1895.

WILLIAM H. PARRISH, M. D., *President*, in the Chair.

Dr. A. M. FULLERTON read a paper entitled

A Contribution to the Clinical Study of Uterine Fibroids, with the Exhibition of Specimens. (See page 569.)

DISCUSSION.

Dr. B. F. BAER : Five or six years ago, I expressed the view in this Society that a woman who is known to have a fibroid tumor ought to be advised of the dangers attending pregnancy and parturition, and that if she then desired protection it was the duty of the physician to furnish such protection even to the removal of the tumor. If, however, she wished to take the risk, for the sake of desired offspring, she had that right, of course.

I believe that this view has been borne out by subsequent observation of these cases and certainly is by this valuable report presented by Dr. Fullerton. Although one of her patients went to term twice and escaped with her own life and that of one or two children, she was only enabled to do so by the skillful and timely treatment which she received at the hands of Dr. Fullerton.

My position was regarded as rather extreme by some members of the Society, but the experience I have had since has only emphasized my belief as to what I then regarded as the duty of the obstetrician and the gynæcological surgeon in that class of cases. I do not believe that a woman, suffering from uterine fibroids should be compelled to furnish citizens for the State, unless she herself desires to do so.

In regard to the causation of fibroids and the intimation given by the reader of the paper that they are on the increase, I am not able to throw much light. From my own observation, fibroid tumors do not seem as plentiful as they were a few years ago. Then, I remember, that quite a string of fibroids came constantly to the clinics. Our improved methods of treating these cases by hysterectomy will, however, account for the diminished number. My observation is that they are more frequent in sterile women ; that the sterility results in a fibrous change in the uterus. Dr. Emmet's view, as stated in his

book, was that they were more common in single women after thirty, and he may be correct. That they follow as a result of subinvolution, I have some doubt. Of course, subinvolution tends to proliferation of connective tissue, but that it tends to a localized proliferation of connective-tissue cells which leads to the formation of fibroid growths, I rather doubt—at least that it is a common cause. I fully accept the idea that endometritis and salpingitis may stimulate to fibrous hypertrophy, but that they give rise subsequently to the development of fibroid tumor is questionable. In many of the fibroids that I have removed, the appendages were not diseased. I suppose about fifty per cent. were comparatively healthy. I am speaking now of patent disease, hæmatosalpinx, pyosalpinx, hæmatoma and the like. Therefore, I do not believe that disease of the appendages ought to be classed as a common cause of fibroid tumor, but, rather, as a result of complication. But this is too big a question to argue here.

Concerning the question of treatment and management during and after delivery, I fully indorse all that was done or advised in these cases. Certainly, the patient who was delivered three times was very successfully managed.

My first case of hysterectomy by the new method was one of fibroid tumor complicating pregnancy. It was very like one of those reported to-night where the patient went to term, was delivered and then lost her life from sepsis. My case was five months pregnant. The tumor occupied the pelvis, where it was immovably fixed. The uterus was high up in the abdominal cavity, and the cervix could not be reached by the examining finger *per vaginam*, having been pushed up out of reach. The patient was exceedingly ill and cachectic and was suffering greatly from pressure symptoms. I attempted to push the tumor up, but it could not be moved, even under ether. Laparotomy was performed, and after great effort the tumor was dislodged from the pelvis. It looked like a sarcoma, and there were other tumors in the wall of the pregnant uterus. Hysterectomy was decided upon and was performed by the supravaginal method which I have since introduced to the profession. She made a good recovery. The operation was done nearly four years ago. I saw her a short time since, and she is still in perfect health. The same course would probably have saved the lives of several of the cases reported to-night, as Dr. Fullerton has stated. Of course, each case must be treated on its individual merits, and when pregnancy is found to exist when we are called, and it is thought safe to permit the gestation to continue until term or viability is reached, that course should be pursued, though the patient

must be constantly watched. But the rule laid down is, I believe, the safest in the majority of cases. The specimens of hysterectomy presented show the value and safety of this method of treating the stump.

Dr. Price has said that they invariably remove a tumor when they cut down upon it. That is a very sweeping statement and is not borne out by the facts, for I once removed a tumor which Dr. Price left after opening the abdomen. I merely state the fact.

I further wish to state that what Dr. Price has said regarding the statistics as furnished by the Polyclinic Hospital Report is, so far as my individual work is concerned, absolutely false.

DR. CHARLES P. NOBLE: The paper of Dr. Fullerton is very instructive and interesting. The importance of the subject renders the careful presentation of individual experience of decided value. Authorities still differ as to the proper method of dealing with pregnancy when it is complicated by fibroid tumor of the uterus. The experience of Dr. Fullerton certainly would not lead us to look with favor upon the expectant method of treatment when the tumors are of considerable size. Of the four women concerning whom the paper is written, two of them are dead, as the result of depending upon the expectant method of treatment. Of course, this number of cases is small, and the general experience would not bear out this mortality rate. Nevertheless, there can be no doubt that certain dangers are connected with pregnancy and labor in fibroid tumor cases. These dangers are least when the tumors are subperitoneal, especially if small and pediculated. Submucous and intramural fibroids are decidedly more dangerous. The submucous fibroids are especially liable to become gangrenous after labor, and both of the varieties under consideration favor the occurrence of post-partum hæmorrhage. I do not know any trustworthy statistics concerning the mortality of labor among women having fibroid tumors of the uterus, but the personal experience of Dr. Fullerton, with a mortality of fifty per cent., is certainly impressive. I agree with Dr. Baer, that it is difficult to lay down any hard-and-fast rule for the treatment of any class of cases, and I would not subscribe to any such rule as applied to this class of cases. Certain social facts must be considered. Some women are so desirous of bearing children, that they are willing to run great risk to accomplish this purpose. If such women have the facts of the case presented to them, and are willing to take the risks in order to preserve their childbearing organs, undoubtedly they have this right. On the other hand, I have no question that it is safer to do a Porro operation than it is to deliver a woman who has a fibroid tumor of

the uterus, and then at some subsequent period to do a hysterectomy. In other words, I would advocate a Porro operation in all cases in which the tumor is of such a size, that were the woman not pregnant, we would do a hysterectomy on account of the fibroid. From my standpoint, this will save her the dangers of the labor, as the relative risks of a Porro operation and non-puerperal hysterectomy are about the same. I believe this is a far better indication for a Porro operation than is a mere suspicion that the fibroid might interfere with the labor, as it is well known that many of these fibroids draw up into the abdominal cavity after labor is under way, thus permitting a natural delivery. It goes without saying, however, that if the fibroid is of the cervical variety, or is absolutely anchored in the pelvis, the indication for the Porro operation becomes absolute.

It should not be forgotten in this connection, that after labor there is a decided tendency for fibroids spontaneously to become smaller, or even to disappear, this, of course, being most likely in the case of small fibroids. Therefore there is room for good judgment in deciding for or against the Porro operation, upon the ground that a subsequent hysterectomy would be necessary, even though the woman were safely delivered. Subperitoneal fibroids situated near the fundus, of a diameter less than three inches, would in my judgment not form an indication for a Porro operation, for the reason just indicated.

The only other point I care to touch upon, is that raised by Dr. Fullerton concerning the removal of fibroids by ligation and the subperitoneal treatment of the stump, contrasted with the use of the *serre-nœud* by the so-called suprapubic extraperitoneal method. I agree with Dr. Fullerton that this method is not applicable to many fibroids. Especially is this the case with small fibroids, and with the complicated cases where the tumor is located deep in the pelvis, or is intraligamentary. In such cases the use of the *serre-nœud* is either extremely difficult or impossible. To my mind the proof of this is, that the men who are the strongest advocates of the use of the *serre-nœud*, are likewise advocates of the removal of the ovaries for small fibroids. No one who believed that he could remove the tumor with practically a *nil* mortality would leave the tumor and take out the ovaries. I would not go so far as to say that the ovaries should never be removed in preference to doing a hysterectomy, as in certain extremely debilitated cases, where hæmorrhage has been long continued, I think that this operation serves a useful purpose; however, it should never be the operation of election, but that of necessity.

Dr. M. PRICE: Unquestionably the Porro operation is much safer

than any other method of treatment. It prevents any further trouble. I have seen several of these cases nurse their children on the second day and with no trouble. The only question is the possible removal of these tumors by the supravaginal method. I think that we could get more attention to the subject, if gentlemen who prefer certain methods of treatment would speak of them in the discussion, and not attempt to say what could be done by competent operators in conditions they know nothing about. I have seen many fibroid tumors in this city, with every possible complication, and I found no possible objection to the *nœud* in any one of them. In our records of private and hospital work we have a mortality as low as five per cent. Can those who advocate other methods do any better? I doubt it. If I open the abdomen to amputate the uterus, if I remove any of it I remove it all, and always use the *serres-nœuds*. Cancer is the one condition which would make me consider for a moment some other operation and then do an extirpation.

I want this Society to notice the nervous condition which follows the fibroid condition of long standing. I have a case now under observation. I first saw her two years ago and she would not then submit to an operation. Most of the time since she has been confined to the house from pressure symptoms and pain and a state of mind bordering on insanity. That woman was sent to me by another patient from whom I removed a fibroid tumor attended by the same nervous symptoms, and who has entirely recovered, mind and body, and was completely relieved of her nervous symptoms and is now a sound and healthy woman. She sent her friend to me because her condition was the same as her own had been. Now, gentlemen, why should these cases drop into our hands and not into other hands as well? We are willing to have these cases investigated from start to finish. I ask the Society to note the mental state in these cases of long-continued disease and ovarian irritation. In the last two years I have not operated upon a single case of this kind where the patient was not mildly insane.

Dr. J. M. BALDY: I find myself at variance with the other speakers on some points. First in the delivery of a woman having a fibroid tumor. There have been a number of women delivered in Philadelphia during the past few years who had fibroid tumors, without special trouble, and I think that difficulty of delivery has been greatly exaggerated. In a number of instances preparations were made for Cæsarean section, but the women delivered themselves perfectly well before the operator could arrive. In these cases the tumors retired

from the pelvis as the fœtus descended. Dr. Fullerton has reported several cases this evening in which the patients were delivered with apparent ease. I would be very loath to act upon the assumption that because a woman had a fibroid she should be denied childbirth, if she so liked; or that her pregnancy should be ended. I remove fibroid tumors, but for other causes than pregnancy. I have seen many cases with fibroid tumors who have borne children, very frequently. Some cases upon whom I wished to operate have gone home and have had children subsequently. Mark you, however, I believe in removing all fibroid tumors, but for other causes than pregnancy. I do not consider childbearing the only or main aim of a woman's life. I believe she is entitled to good health if she can obtain it, children or no children.

Then, we have heard lately much about pressure symptoms: I have not observed them to any great extent. I have had a different experience from Dr. Baer as to the coexistence of tubal and ovarian disease with fibroma of the uterus. I have found cases of pyosalpinx, hæmatoma, and other conditions; it is not the ordinary septic disease which we meet with so often in these cases. I believe that the same factor that causes the fibroid change in the uterus has caused a fibroid and other changes in the ovaries and tubes. From the character of the disease, in my experience, it is as the rule not due to septic infection.

Now, as to the removal of the uterus by the extraperitoneal method. I performed this operation for a number of years and then adopted the method of dropping the stump. The tumor that can be removed by the extraperitoneal method can be removed by the intraperitoneal, and he who says that it can not does not understand the operation. The reverse is equally true.

Dr. Price has spoken of a mortality of five per cent. after operations for fibroids. Now, when I can not operate on such cases by dropping the pedicle, without a mortality of five per cent., I will lay down my knife and not take it up again. Another reason why we should drop the extraperitoneal method is that hernia is a frequent result following this method. I have now in my practice three cases which have been operated upon by Dr. Price by this method, and they have enormous hernias. One of the cases has a fistulous opening which will not heal. No one can do these operations by this method more carefully than the Dr. Prices, and if they can not do it without hernia no one can. I think that the fault here is not in the technique of operating, but in the method. I have not observed it in the method

I have adopted. By dropping the stump I have eliminated a very large and important factor in the occurrence of abdominal hernias.

Dr. M. PRICE: As to Dr. Baldy's having three of our cases with hernia, I am glad that they are so few. We have a hundred and fifty suprapubic hysterectomies walking about that we know of, and I have no doubt there are others in this large list. A man can not open the abdomen in so many cases, especially where you have to cut through several inches of fat, without greatly weakening the abdominal wall predisposing to hernia, in some cases. The cases referred to may have belonged to our early operations when we prided ourselves on the patient's early getting up. Hernia may follow in any case of operation upon the abdomen.

It has been also said that those men who do the extraperitoneal method have to remove the ovaries instead of the uterus because they are not competent to remove the uterus. Where we have large tumors, no man would expect to remove the ovaries. Now, the case referred to last as exceptional by Dr. Baldy is just the case in which it can be most easily performed and the tumor removed. No man or woman should forget what Dr. Levis said to the students that "fibroid tumors have a capsule and can be shelled out." I have seen cases in which the tumor extended down to the anus, but they were shelled out and a good pedicle manufactured for the use of the *navel*. These cases are a little more dangerous; but still we have a mortality of less than five per cent.

Dr. BALDY: With regard to the class of cases an example of which I saw in New York, those cases which develop from the cervix and burrow downward into the connective tissue alongside of the vagina, becoming practically extraperitoneal, can not be treated by any method short of complete removal. These cases are, however, exceedingly rare; I have never seen but the one.

With regard to the nervous symptoms of pelvic disease, I have not seen anything that would separate fibroids from other lesions. Any long-standing chronic disease in the pelvis will break down the health and cause nervous symptoms; but that this condition is peculiarly due to fibroid tumor, I do not believe.

With regard to inflammatory disease of the appendages being the cause of fibroid tumors, I have seen nothing that would convince me that it is true. Since the theory was brought up two years ago I have not been able to convince myself that there is anything in it, further than where a constant source of irritation exists and there is a tendency to the formation of fibroma, the irritation may hurry the growth;

but this is a very different proposition from that which holds that the inflammatory diseases originate the fibroid.

Dr. GEORGE ERETY SHOEMAKER reported a case of

Hysterectomy by Ligation. (See page 586.)

He also reported a case of

Button Anastomosis, Operation by Dr. Murphy, as follows :

The specimen here shown was removed from a patient eleven months after a button end-to-end anastomosis operation which was done by invitation in this city, by Dr. J. D. Murphy, of Chicago, in September, 1893.

Dr. Murphy's operation was done to close a fæcal fistula which followed strangulated hernia in a patient sixty-five years old. How successful it was could with difficulty be learned from the patient. When, however, she came under my care nine months later with another strangulated hernia at the same point, the sac and coverings just separating with gangrene, she stated that fæces occasionally had continued to escape from the site of Dr. Murphy's operation, though more passed by the anus.

When I found her she had had no passage for three days ; the vomiting was fæcal, the pulse poor, and the general condition bad. A protrusion of the size of the fist was tightly constricted at the base where it was attached to scar tissue at the side of the external opening of the right inguinal canal. The skin was greenish black and a watery discharge escaped from the fissure around the base, moist gangrene of all coverings of the hernia had occurred, but on cutting them all away with the scissors down to the abdominal opening, a loop of intestine was found protruding some four inches and in this were three well-established openings with rounded edges. The bowel though thickened and inflamed was not gangrenous and it was stitched into the opening with details which need not be mentioned here.

What had apparently occurred was this. Granting that at one time a perfect anastomosis had been secured, the same portion of gut had again found its way into a large hernial sac where it became adherent. The line of intestinal union must have now given way for the patient stated that there was occasional fæcal discharge. The specimen itself shows the two ends of bowel united on one side only, for not more than one third the circumference. The escape of fæces into the sac is very likely what caused the gangrene of the sac and cover-

ings without gangrene of the gut, and it is possible that the line of union gave way still further in the resultant inflammation. At my operation the bowel was not incised or torn.

Dr. Holmes afterward took charge of my ward for me and operated two months later to close the fistula. This gave the opportunity for securing this specimen. Dr. Holmes reported his operation before the County Medical Society November 14, 1894. The patient died.

Her intelligence was not great enough to enable me to learn whether she had had gradually developing obstruction or not. The possible contraction of anastomotic opening and subsequent giving way could not be proved. She declared she never had passed Dr. Murphy's button, which was probably an error.

Many thanks are due to Dr. S. S. Kneas, Pathologist of the Methodist Hospital, for the microscopic examination of the specimen and the preparation of the photographs presented.

DISCUSSION.

Dr. M. PRICE : I would like to ask if the case reported was one which had been operated on by Dr. Murphy in Dr. J. Price's hospital?

Dr. SHOEMAKER : Yes, it was.

Dr. PRICE : Well, I can affirm the fact that she did not pass the button while in the hospital. It was not an end-to-end anastomosis, but a lateral one, and less favorable for this operation. No adhesions were released ; operation done quickly. This was very different from the method ordinarily followed by Dr. Joseph Price, who dissects the bowel free from adhesions, and unites it end to end. I have seen him remove fifteen to eighteen inches from an indurated syphilitic bowel, and have the button passed in from six to eight days after the operation. I believe that Dr. Murphy did everything that was proper in this case ; but still the patient went out with the button. I do not think the method so suitable for a lateral anastomosis as the Lembert-suture method with a large opening in the bowel.

Dr. SHOEMAKER : The only information which Dr. Holmes could get about the case from Dr. Price was that it was an end-to-end anastomosis. I believe the Murphy button a great addition to our armamentarium, as it is the quickest method of union of the bowel. I always take a set with me. I believe, however, that the stitching method, although taking more time, is in some cases more advantageous.

Adjourned.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Meeting of January 18, 1895.

The *President*, FRANKLIN H. MARTIN, M. D., in the Chair.

Abstract of a paper entitled

VAGINAL HYSTERECTOMY FOR SEPTIC PELVIC DIS-
EASES.

A TEN-MINUTE PAPER.

BY FERNAND HENROTIN, M. D.

It is a number of years since Péan first suggested and practiced vaginal hysterectomy for septic bilateral disease of the uterine annexa. His operation was adopted by his pupils and collaborators, Ségond, Richelot, Jacobs, and many others.

When this operation was first suggested, and when the results obtained were presented to the Academy of Medicine in Paris by Ségond, a storm of dissension was created. Ségond defended his position and predicted a great future for this new procedure. His prediction was soon verified.

The Germans were very slow in employing this operation. In this country, I believe, I was the first to operate by this method and to publish my views. Boldt, of New York, in a thorough review of this subject, mentions a case in which he removed the uterus *per vaginam*. A number of other American operators, among them Polk and Edebohls, have reported successful vaginal hysterectomies for septic pelvic diseases, and speak well of the ultimate results.

A few of the arguments in favor of this operation are :

It disturbs the general abdominal cavity to a slight extent; it scarcely invades any but diseased territory; and it leaves a broad, straight opening for drainage. These conditions must be attended with the least amount of danger.

A surgeon would not attempt to remove a suppurating kidney through the abdomen, but would naturally do the operation extra-peritoneally by way of the flank; he would not enter the abdominal

cavity to excise a suppurating appendix vermiformis, if he could reach it extraperitoneally. The less the general abdominal cavity and intestines are disturbed, the less the danger. The vagina seems the straightest, shortest, and most natural channel to follow in reaching uterine and peri-uterine disease. The avoidance of an abdominal scar and the liability to ventral hernia are no small factors in favor of the operation. This operation is particularly applicable in cases of long-continued suppurations in which the abscess frequently empties into the rectum, bladder, or vagina. The results of this operation are decidedly better than those of laparotomy. Many patients whose diseased appendages only have been removed by abdominal section remain uncured; a far greater proportion of the patients are entirely relieved by an operation that removes the uterus. Need it again be recorded that a uterus without annexa is simply a cloaca for the retention of septic germs, a frequent source of annoying pain, discharge or hæmorrhage, and can be of no service whatever?

The other abdominal organs are scarcely disturbed, the danger of hernia is removed, convalescence is decidedly shorter, and the shock to the patient is acknowledged by all to be infinitely less.

An objection constantly made against this operation is that when it is begun, there is no way of retreating, and the hysterectomy must be finished, even if the disease is not so extensive as was at first supposed. Two years and a half ago I began a vaginal hysterectomy on a lady from Iowa. I opened an abscess in the broad ligament and pulled down and removed the left ovary and tube. The abscess had filled and emptied repeatedly. I packed a little iodoform gauze in the wound and put her to bed. Last week I received a photograph of a large, fat baby that she had given birth to since the operation. The profession hardly realizes what can be done through a small opening behind the cervix. Jacobs, of Brussels, evacuated a large ovarian cyst, delivered the cyst wall, and tied and cut the pedicle with perfect success through a small opening behind the cervix, in a woman six months pregnant, without interrupting gestation.

In ten years from to-day advanced and experienced gynæcologists will treat septic diseases of the uterus and appendages and annexa about as follows: Having failed to stop the disease within the uterus, they will not wait idly by while peritonitis and cellulitis play havoc and produce incurable destructive conditions. Incipient phlegmon in the broad ligaments will be incised and drained before much damage is done. Intratubal disease will be recognized soon after invasion of the peritonæum and will be treated in its beginning. Fol-

lowing the perfection of radical work will come conservative methods. When, in spite of treatment or because not seen early enough, advanced disease of the uterus, tubes, and ovaries is present, the methods employed will vary according to the conditions present. In young women desirous of offspring, where tubal or ovarian disease does not seem to be too extensive, and particularly where the uterus is anteflexed, apparently more easily reached through the abdominal wall than through the vagina, the abdomen will be opened, the diseased tube or ovary treated by draining or partial excision, or whatever method be advisable, and returned. More frequently, whether one or both sides are affected, and particularly when the disease is considered as probably incurable, a vaginal incision will be made into Douglas' pouch, the ovaries and tubes palpated and if necessary carefully drawn down, inspected, and left if considered sufficiently healthy, or one of them removed and the other left. When the disease is considered incurable on both sides, the semicircular incision will always be made around the cervix and a hysterectomy performed, ordinarily with complete removal of the annexa.

When the gardener notices the leaves drop from a particular branch of a tree, the other branches remaining healthy, he does not content himself with picking off the leaves, but boldly clips the entire limb, lest the trunk of the tree become affected. So the operator of ten years hence will always take the uterus, if both appendages are incurably diseased. We now perform too many hysterectomies and laparotomies in proportion to the number of our patients, but in ten years more we will have learned decidedly more about conservative work, and a smaller proportion will need radical measures; but in the cases where these are necessary we will learn in all instances the advantage, as regards cure and results, of removing the uterus when both appendages are physiologically destroyed; and when we do remove it, unless there are special contraindicating reasons, we will remove it by way of the vagina.

Abstract of a paper entitled

ABDOMINAL HYSTERECTOMY WITH ENUCLEATION OF
THE APPENDAGES IN SEPTIC PELVIC DISEASES.

BY J. T. BINKLEY, JR., M. D.

Dr. Binkley's observations of the slow convalescence of patients who have undergone double salpingo-oöphorectomy, and the long chain of reflex symptoms in these women dependent upon an enlarged and

diseased uterus, has led him independently of the writings of others to remove the uterus with its appendages in cases of double pyosalpinx. His arrival at this conclusion was determined by the following cases :

CASE I.—Miss M. Tumor of the uterus was diagnosed. Upon opening the abdomen a ten-pound myoma presented involving the whole of the uterus. Total extirpation was performed. In twenty-seven days the patient left the hospital. Eight days later she resumed the care of her father's house, doing the work of a domestic.

CASE II.—Mrs. C., fifty-six years of age, mother of three children. The menopause occurred nine years ago. She has had metrorrhagia, vesical irritation, and pelvic tenesmus. Uterus and appendages in normal position, but enlarged, congested, and sensitive. Curettement for diagnostic purposes was done ; the product was found to be non-malignant. The patient was kept under observation for a short time ; all the symptoms continued. I then made an abdominal section and removed both ovaries and tubes. The patient made a good recovery from the operation ; the hæmorrhage ceased, and, though the reflex symptoms continued, I hoped for ultimate relief and sent her home at the end of four weeks. There was no relief from the severe bearing-down pains and the vesical irritation. At the end of ninety days I removed the uterus. She made a speedy and perfect recovery, left the hospital in three weeks, relieved of all symptoms, and is well to-day.

CASE III.—Following removal of the appendages a persistent fistula was found which originated at the right horn of the uterus. Upon secondary abdominal section no ligature was found, but a probe could be passed into the cavity of the uterus through a sinus. The uterus was now curetted and packed, the peritonæum stitched over the sinus, the fistulous tract dissected out, and the abdomen closed ; but some point of infection remained and the fistula reopened. I then removed the uterus and the cure was complete and quick. During the months following the first operation the annoying reflex symptoms continued ; immediately after the hysterectomy they disappeared.

With these experiences fresh in my mind I determined to extirpate the uterus in cases of septic pelvic diseases, and have already done so in six cases with most gratifying results.

Péan, of Paris, was the first to remove the uterus in cases of septic pelvic disease, in 1886. But his method of operation was through the vagina. Vaginal hysterectomy for this condition has been exten-

sively practiced abroad and the mortality has been low, but we are not told that perfect recoveries resulted.

The great revolution in the treatment of this class of cases was started in New York by Polk in 1893, and the favor with which the method has been received is evidenced by the numerous trials given it by gynæcologists, especially in that city.

In an excellent and exhaustive paper upon this subject presented by Dr. J. M. Baldy at the meeting of the American Gynecological Society, he asks and answers five questions, as follows :

1. Is the uterus essential or useful after an ovariectomy? The office of the uterus is gestation ; it is therefore a useless organ after the ovaries have been removed.

2. Are all cases cured after double ovariectomy? No.

3. Are patients cured by hysterectomy when double ovariectomy has failed? Yes, decidedly ; and Dr. Baldy cites in proof four cases in which removal of appendages and long-continued treatment was attended by no relief, and in which hysterectomy was done and a cure resulted.

4. Does hysterectomy increase mortality? No. Dr. Baldy had twenty-two consecutive successful cases, and describes their convalescence as smoother, easier, and more satisfactory.

5. Is the retention of the uterus dangerous to the patient? Yes. It may bleed, weigh down the pelvic floor, contain tubercle bacilli, germs of carcinoma, and the like.

He does not recommend the operation in all cases of pelvic inflammatory disease, but in cases in which the womb is enlarged, infiltrated, or diseased. He concludes by asserting that the American surgeons have kept the mortality as low or lower than the French surgeons in their vaginal operation, with very much more complete removal of the diseased tissue.

In the discussion Dr. Florian Krug lauded the operation ; said it lessened the mortality and hastened the convalescence. Dr. H. T. Hanks cited numerous delayed and imperfect recoveries following the old method where the technique could not be criticised. He strongly advocated hysterectomy. Dr. Bache McE. Emmet said that the operation in properly selected cases was based upon firm ground. Dr. Byford concurred, as did Cushing, Edebohls, and others, and Pryor enthusiastically commended the operation.

A brief description of the operation will prove that it has advantages over simple removal of the appendages. The patient's vagina having been thoroughly sterilized, I then curette and pack the uterus.

The removal of the appendages I will not describe, but will relate briefly the technique of the hysterectomy. First a provisional ligature of heavy silk is passed through the broad ligament about half-way between the fundus and the internal os, on either side of and close to the uterus. This is tied tightly over the top of the tube, close to the uterus, and the ends are left long and handed to an assistant or held in the hands of the operator. A needle, armed with large chromicised catgut, is now carried through the broad ligament, nearly as low down as the ligature, but a little external to it; is then passed through the edge of the upper border of the broad ligament, just sufficiently to anchor the ligature, and at a point just external to and under the fimbriæ of the tube and tied. A ligature is passed and tied in a similar manner on the opposite side. The broad ligament is now divided on either side between the silk and catgut ligatures. The appendages and uterus now stand like an inverted cone, attached only by the cervix. A circular incision is then made anteriorly through the peritonæum just above the bladder, and a semicircular incision made posteriorly; the peritonæum is stripped down, the uterine arteries tied close to the uterus on either side, the uterus amputated just above the vaginal attachment, and the operation is practically ended. The posterior and anterior flaps may be sutured with a continuous suture or coaptated by two or three interrupted catgut sutures, and a clean floor to the pelvis is thus formed.

In conclusion I beg to summarize the indications for extirpation of the uterus in cases of pyosalpinx and allied conditions.

1. The uterus is a part of the pathological mass. It is in the majority of cases the center of infection, and it frequently causes infection by direct transmission, through its lymph channels, from the mucous membrane to the peritonæum. Have we a right to expect or assume that these germs which are left in transit will "work out" without infecting the patient, simply because the appendages have been removed? Certainly not.

2. Malignant disease of the uterus is prone to occur, germs of tuberculosis harbored, and menstruation excited.

3. The uterus has lost its support above, rests above the pelvic floor, and will almost certainly become displaced and become adherent to the intestines or omentum.

4. When the uterus is removed the operator has a clean and unobstructed view of the whole pelvic cavity, and may easily locate and check any bleeding and close up a completed operation, or, if necessary, the drainage may be from below.

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DISCUSSION.

Dr. HENRY T. BYFORD: This comparison of statistics is worth nothing, because the operations are performed in different kinds of cases. A man who understands how to operate chooses the operation according to the case. All of these operations are right, all legitimate, and all should be done, but only in properly selected cases.

There are cases of bilateral disease of the ovaries in which the uterus is not seriously affected. I exhibited specimens to night in which the ovaries were badly affected, but the tubes had nearly recovered; there was some disease of the mucous membrane, but it was not severe. In like manner some uteri that have recovered, or are recovering, or can be made to recover, need not be removed. The uterus certainly should not be removed, for fear of cancer or some new trouble in the remote future. This would be more absurd than to take out the vermiform appendix every time the abdomen is opened. In some cases the appendages are adherent to the uterus,

and the interior is so extensively infected that the diseased tissue can not be removed by the curette or otherwise cured. In such cases it is better to take out the uterus. In another class of cases the pelvic tissues are all matted together, and we can not remove the disorganized appendages from above with safety or satisfaction. In these cases the plan advocated by Dr. Henrotin—viz., vaginal hysterectomy—should be adopted, with removal of the lower walls or bottom of the suppurating cavities.

In most cases in which abdominal or vaginal section can be done the vaginal operation is safer for removing the appendages. They should be removed through the vagina when they are low down. I have operated this way fifty times, removing the appendages in all but two or three cases which did not demand it, and all the patients recovered. A large proportion of these were pus cases.

Vaginal hysterectomy is safer than abdominal hysterectomy for the removal of small uteri affected with malignant or suppurative disease. In forty-seven cases of this kind I have had but two deaths. This makes a series of ninety-seven vaginal sections, in over two thirds of which pus or malignant tissue was removed, with two deaths, or a mortality of 2.06 per cent. As this includes all of my early cases, it proves to me that vaginal section, notwithstanding all the difficulties connected with restricted space and field of vision, is not only safer but much easier to learn than abdominal section.

Dr. KARL SANDBERG: I have not felt the necessity of doing hysterectomy for tubal or ovarian abscesses. The dangers I have experienced in operating on diseased appendages have generally been from hæmorrhage, either during the operation before putting on the final ligature, or after the operation. There is not great danger of septic infection of the peritonæum from the different abscess cavities. I have operated on patients with six or seven different abscess cavities with good results. One of my last operations was upon a woman who had had an abscess opened through a median abdominal incision, fistula remaining. When she came under my care a fistula existed, accompanied by high temperature. The fistulous tract was dissected out and the abdomen opened. An abscess existed in both ovaries, in both Fallopian tubes, between the uterus and bladder, in the *cul-de-sac* of Douglas, and adjacent to the right uterine appendages. The patient made a good recovery. I have had many similar cases. I have always attributed my fatal results to hæmorrhage rather than infection. Endometritis should not alone indicate removal of the uterus. If this were true, proper treatment would be to make vaginal

hysterectomy before the appendages became diseased. If time shall prove that hysterectomy gives better results than enucleation it ought to be adopted.

Dr. T. J. WATKINS: The ultimate results of enucleation of the uterine appendage for pelvic suppuration have undoubtedly been unsatisfactory in many cases. The unfavorable results, however, have been due, in my opinion, to faulty operation rather than to the method of treatment. The common errors are:

1. The incomplete removal of the diseased tissue.
2. The use of non-absorbable ligatures in infected tissue.
3. The inclusion of too much tissue by the ligatures.
4. Leaving extensive raw surfaces which cause adhesions.
5. Inefficient drainage.

The removal of a healthy uterus seems to me to be unnecessary mutilation. When, however, the uterus is enlarged, displaced, adherent, or infected, it should be removed with the appendages. When possible a portion of the cervix should be allowed to remain, so as to leave a stronger pelvic floor.

Menstruation following removal of the uterine annexa is not always an unfavorable symptom. I have observed about twelve cases in which menstruation continued, in which neuroses were practically absent, and in which the morbid dread of being unsexed was not present.

I would like to ask Dr. Henrotin what success he has had with vaginal hysterectomy in cases complicated with extensive intestinal adhesions.

I firmly believe in exploratory vaginal incision.

Dr. G. WILLIAM REYNOLDS: To perform any operation intelligently it is necessary to understand the pathology of the disease. Pathology is the only safe guide in directing the proper and safest surgical procedure. This recognized rule is beautifully illustrated in pyosalpinx, and by this means I wish to prove the fallacy of removing the uterus for the cure of pyosalpinx. It has been proved that the gonococcus of Neisser is the great factor in the production of pyosalpinx. This germ does not extend beyond the most superficial of the subepithelial layer. By the throwing off of the cylindrical epithelium during the inflammatory processes the cocci are permanently eliminated and the parts replaced by permanent epithelium which resists the further invasion of the cocci. The condition is different in post-puerperal infection, when we are dealing with the streptococcus pyogenes, which extends beyond the mucosa into the lymphatic channels;

or in mixed infection, where the lymphatics and cellular tissue are involved; in such cases hysterectomy would be permissible. I consider the vaginal method, as illustrated by Dr. Henrotin, as the safest and best operation.

Dr. F. H. MARTIN: I am very much interested in these subjects. I have never removed the uterus for suppurative disease alone. The discussion of these subjects in the American Gynæcological Society last year has caused me to change my treatment of pyosalpinx. I do not believe Dr. Baldy proved his propositions. Because the cases he reported developed very few neurotic symptoms following the removal of the uterus, it does not prove by any means that hysterectomy was a better operation than enucleation. Many of us have operated upon a series of probably twenty cases for pyosalpinx, in a careful way, without tearing, with thorough removal of the abscess walls, including the entire tube, and have obtained a perfect cure after each operation. It is only one in twenty or thirty or forty of these cases which subsequently trouble us because of a fistula, neurosis, strangulation of the bowel, or some other symptom. I believe where thorough enucleation has been done in the removal of the tubes the operation has been almost uniformly successful. By thorough enucleation of the tubes after thorough curettage of the uterus, we get about all the infection out of the pelvis that it is possible to remove, except in puerperal cases. Thorough curettement is done by placing the patient in the proper position at the foot of the table, by dilating the uterus after the vagina has been properly prepared, and by doing the most thorough curettage possible, deep into the horns of the uterus, using all the force necessary to accomplish the desired result. If by chance in the manipulation the appendages are injured, no harm results as immediate laparotomy is done. I have done thorough curettement for five or six months in almost every case, even where there were few symptoms of endometritis. After curetting, the uterine cavity is irrigated with a solution of bichloride of mercury, followed by sterilized water. A loose packing of gauze is placed in the uterus for drainage. The abdomen is then opened and the appendages enucleated. The curettement increases the shock very little. I have among my patients probably a dozen old hæmorrhagic cases where the appendages have been removed for pyosalpinx. I can not agree with Dr. Watkins that less neuroses occur in the hæmorrhagic cases. In a paper read at San Francisco before the American Medical Association I advocated, in removing the appendages for fibroids, deep ligation into the broad ligament, so as to not only remove the tube and ovary, but to include

the main channel of the ovarian artery. To ligate the tube near the uterus, to lift the ovary out of its bed, and to ligate the pedicle without including the main channel of the ovarian artery at all, is readily done. In these cases, if there is anything in an uninterrupted blood supply as the cause of subsequent hæmorrhage after removal of the appendages, it seems to me a good plan to ligate deeply enough to insure including the main channel of the ovarian arteries.

Dr. BYFORD : I have seen several cases of oophorectomy in which the patients had trouble afterward, but in nearly every case I have been able to demonstrate that there was some defect in the operation. There was almost always something wrong about the stump which kept up the uterine hæmorrhage and other symptoms.

With regard to the ligature of the uterine vessels for the hæmorrhage, it is not the obliteration of vessels that is called for ; it is the removal of diseased tissues that cause the trouble, not those that result from the cause. Neuroses come when the uterus is removed as well as when it is not. I opened the abdomen of one patient twice, and each time she complained of the parts that were left. Finally I operated again and told her that I had taken everything away. She did not complain afterward, although I had not removed the uterus.

Dr. J. D. BINKLEY : I am glad to know that you all approve of the position taken by me in my paper. I said distinctly that hysterectomy was indicated in cases where the uterus was the center of infection. I have no criticism to make upon Dr. Henrotin's admirable paper. This subject was ready made and I was requested to write upon it. It was not my purpose to come before this Society at the end of four or five months to report on this operation before I had observed the result for some time, and to make great claim for it. Dr. Byford says if there was no uterine disease he would not do hysterectomy. Then I would like to know why he would have a patient come back to have the uterus treated after the appendages have been removed. I am surprised that so many of these gentlemen have such wonderful results. I regret that my experience does not coincide with theirs. In two cases where I removed abscesses a week ago both patients have made good recoveries up to date. In the last case the operation could not possibly have been done through the vagina, because the abscess was above the crest of the ilium, the uterus was attached firmly to the rectum, and the abscess had to be separated from the intestine. In another case, on one side the appendix had grown to the broad ligament, and the rectum to the

uterus; on the other side the small intestine had grown to the broad ligament in front. I could not have done that operation through the vagina.

I do not know how Dr. Sandberg can ligate the vessels until he gets to them by first enucleating and lifting up the mass. He also speaks of ligating the uterine arteries first. I suppose he would do the operation through the vagina first, then go into the abdomen. These operations can be performed with the intestines out of the way; after the adhesions are once loosened, they can be put above and protected by gauze or sponges. It is well known that shock is limited if the intestines are not handled. In enucleating these abscesses through the abdomen you can see the surface that you tear the abscess sac from, and bleeding points may be taken care of, which can not be done by the other method. Dr. Henrotin prophesies that in ten years we will not wait. I hope they will be detected early enough so that we may not have to operate. Now, we do not see the patient until we have to make an enucleation, and then we can not get the patient back for curettement and treatment. She has had an operation, it has been a great sacrifice of expense and time, and she will not come back for a long course of treatment. It was certainly the consensus of opinion at the discussion in Washington that the method was the proper one; every one who spoke upon it favored it in selected cases, and these are the only cases in which I recommend it.

Dr. Watkins says he dissects out the tube, and thinks it is one of the things that should be considered in the technique; he also says that drainage is the cause of more sinuses than anything else, which is conceded by everybody. Now, the dissection suggested by Dr. Watkins will occasion considerable oozing from the horn of the uterus, which may necessitate drainage; or if the hæmorrhage be entirely arrested by deep sutures, the sutures will have been planted in septic soil. We may expect a sinus in either event. In cases such as we have under discussion, his method is not to be recommended.

Dr. HENROTIN: Dr. Byford has told us how patients come back and have to be curetted; Dr. Martin had twelve old patients who are writing to him, and they are the worst cases in his practice. If twelve patients are writing to Dr. Martin, there are probably twenty-five patients writing to other doctors and probably fifty at home tired of doctors. This is the reason that physicians are seeking better methods. After taking away the appendages the patients constantly come back. The reason why so many operators are now adopting this method of removing the uterus is that they get more satisfactory re-

sults. If there is no more danger in taking away the uterus, why should it not be taken away and a perfectly clean pelvic floor left? The uterus is useless after the ovaries are removed.

Dr. BINKLEY: In an operation some two weeks ago at the Chicago Hospital I thought I would do a preliminary curettement. I had no reason to believe that the woman had any degeneration of the endometrium at all; the cervix did not present any of the usual signs. I had the vagina prepared for the curettement; when the speculum was put in it looked perfectly clean and healthy, but I never saw more material come from a uterus than came from that one. After thoroughly cleaning it out and packing it I removed two large tubes filled with water—hydrosalpinx. You can not always tell what is in the uterus.

PRESENTATION OF SPECIMENS.

Exhibition of Specimen of Mesenterium Commune.

By DR. BYRON ROBINSON.

Death due to kidney disease. Age, forty-five; sex, male. The omentum was located to left of median line, not visible. It was fixed as usual to the splenic flexure, but extended along the right two thirds of the transverse and ascending colon. The part that should be below the colon was above it and adherent to the upper transverse mesocolon. The old adhesions held the omentum to the left side of the common mesentery. The relation of the great omentum and spleen and colon at the splenic flexure was normal. The omentum could be made to touch the heart and middle third of the thigh. The cæcum lay under the liver; one inch and a half thick by three inches wide; symmetrical; covered by peritonæum; ileum entered it from behind; mesentery seven inches long; no gut lay on the psoas and there had been no inflammation. The cæcum was not covered by omentum. Ascending colon six inches long, but was merged into the transverse colon. Appendix three inches long; pointed toward spine; had full mesentery; lay just below liver; no adhesions. Transverse colon sixteen inches long; turned down, parallel and close to the descending colon down to the pelvic brim, then it turned up as ascending colon does. Descending colon eight inches long; no mesentery. Sigmoid twenty-eight inches long; many dense adhesions over psoas and in mesosigmoid; intersigmoid fossa present and would admit index finger. Small intestine eighteen feet and a half long; mesentery eight inches long. The whole digest-

ive tract had a common mesentery; one fourth of them were on the right side. Fossa duodeno-jejunalis looked to right and downward and admitted tips of two fingers. Stomach lay to left of median line and was vertical. Pylorus lay two inches to left of median line. Duodenum had full mesentery; it had no artery or vein in front of it, and held head of pancreas in its mesentery. Mesentery eight inches, longest about cæcum; would herniate. Length of mesentery: ascending colon, seven inches; sigmoid, three inches. Spleen, perisplenitis. Adhesions were present in the following regions: gall bladder, splenic flexure, sigmoid flexure, omentum, neck of bowel loop.

By the courtesy of Dr. Louis J. Mitchell I made the post-mortem examination.

In developing, the great bowel loop never rotated. A large band of old cicatricial adhesions which arrested the intestinal rotation was observed. The peritonitis was old, and wide, dense adhesions existed. There was a partial volvulus present which evidently had existed for a long time. The splenic flexure was as high as normal. As the transverse colon lengthened in developing it passed to the pelvic brim, where some unknown force directed the part that should have become the ascending colon to the right. The dangers in such a case are:

(a) Volvulus, which did exist in this case.

(b) Hernia of the elongated mesentery.

(c) Rupture of the appendix, which could lie in the small intestines, causing fatal peritonitis.

(d) Difficulty in locating the appendix in case of appendicitis.

From the splenic flexure to the pelvic brim the transverse and descending colons were bound close together by membrane which showed old peritonitic adhesions. The transverse and descending colons lay parallel to each other and almost in contact to the middle of the sigmoid, which was twenty-eight inches long. Six inches of the colon which should have become the ascending colon turned upward, forming an acute angle, until it reached the lower surface of the liver. Appendicitis in this case would be confounded with inflammation around the gall bladder. The head of the pancreas was in the duodenal concavity and mesentery as usual, but the superior mesenteric artery and vein did not pass in front of the transverse portion of the duodenum. There was not so much serous surface on the right face of the mesoduodenum as there was on its left face. The serous surface of the right face had disappeared by coalescence

or displacement. The arrest of development in this case appeared very early, perhaps before the end of the second month of gestation. The anomaly was caused by peritonitis arresting the rotation of the great intestinal loop. The fossa et plica duodeno-jejunalis were present. Peritonitis had caused adhesion of the right and lower border of the omentum to the transverse and descending colons.

Dr. T. J. WATKINS : This specimen is a

Left Tubal Pregnancy

at about the fourth month of gestation. It consists of the uterus and annexa. Attached to the left tube is a large mass of placental tissue. The decidual membrane is intact. The reasons for the removal of the uterus were :

1. The extensive involvement of the uterine wall.
2. Inflammation and adhesions of the right tube and ovary, which necessitated their removal.
3. The increased size of the uterus and the uncertainty as to its contents.

The rupture of the tube probably occurred about the eighth week, but hæmorrhage was limited by general adhesions of the omentum around the gestation sac. The fœtus shows a development of about ten weeks. The patient made a rapid and uninterrupted recovery.

Dr. HENRY T. BYFORD : This is a specimen of

Tubal Mole.

Impregnation occurred in the abdominal end of the tube near the center. There are one or two interesting points about this case. First, the symptoms were exactly the same as those of extra-uterine pregnancy with rupture at eight and a half weeks. Two weeks before the last attack the patient had sharp pains in the abdomen, and finally, while leaning over a wash bowl, was taken with a severe pain in the side. It was nearly two hours before a doctor could be obtained, and the patient was then pulseless. I saw her about eleven hours later ; the pulse was 140 to 160 under the influence of stimulants.

Upon opening the abdomen, January 2d, I found at least two quarts of what appeared to be venous blood in the abdomen. There were a few, small, firm clots, which I supposed had been formed previously. The blood was sponged and douched out and the abdomen closed without drainage. The case is still under observation and will be reported at a subsequent meeting.

The next specimen is a

UTERUS, FOUR AND A HALF INCHES LONG, REMOVED FOR PROLAPSE
BY ENUCLEATION.

I merely wish to exhibit it and state the ease of the enucleation. I worked up from the cervix to the fundus, keeping close to the edge of the uterus, and cut one side off completely, even severing the Fallopian tube without using a ligature, and worked up the other side in the same way. Two vessels running into the left uterine horn bled slightly and required catgut sutures. The operation is easily done, and is an ideal operation in non-malignant cases without any usual vascularity of the tissues.

The next specimen is diseased ovaries and tubes from a patient who was infected with gonorrhœa. She had an attack of peritonitis a year ago, and a second three months ago. There were very extensive ovarian adhesions on both sides, but one would hardly have thought from the gross appearance of the tubes that they were diseased. I have here a

SET OF UTERINE DILATORS

designed for the purpose of keeping the cervix moderately dilated, and thus maintaining uterine drainage in cases of endometritis with imperfectly developed or contracted cervixes. They are stiff in the center, but will bend quite easily on the end. They can be used in a retroverted or an anteverted uterus. In my office practice I use the two smaller sizes, and the larger ones after curettage to keep a poorly developed cervix dilated until the tendency to contraction passes off. It is passed through the internal os twice a week, and later once a week, until the dilatation has been maintained for three or four months.

Dr. F. B. ROBINSON : Dr. Byford's specimen is of interest to me because of the simple method he employs for enucleation of the uterus. This operation was done long ago, but the hæmorrhage was so severe that it was abandoned in Germany. I think Dr. Byford's specimen is not a fair test of the operation, because there was prolapse outside of the vagina, which would elongate the arteries and of course made it easier to get at the uterus and into its substance. I saw Dr. Pratt do this operation about a year ago; his method was to take scissors that curved toward the uterus and clip into the substance, and the same way with the tubes. A tremendous impetus has just now been given in New York and other places to removal of the uterus; if we can do these operations through the vagina it is better for the

patient, as the recovery is more rapid than after abdominal hysterectomy. Disturbances arise in two ways, from infected ligatures and hernia. Dr. Byford is the first one to report to this Society the taking out of the uterus without a ligature; and I think this is a good plan, because operations through the vagina are harder to do and less amateur surgery—that is, bad surgery—will be done, hence vaginal extirpation of the uterus marks a new era of progress.

I would like to ask the records as to vaginal hernia after these operations. I made a vaginal hysterectomy a year ago and vaginal hernia followed.

Dr. BYFORD: This operation is only recommended for prolapse. This case was not completely prolapsed, but the cervix was partly in the pelvis and partly outside, and gave her a great deal of trouble. Of course a cancerous uterus would not be removed in that way.

Dr. BAYARD HOLMES: I would like to speak of the inflammation Dr. Robinson referred to in relation to his specimen. He says the gut failed to make a certain movement, on account of inflammation, at the eighth week after conception. I do not think he means that it was due to inflammation. It does not seem likely that it was due to inflammation; there are other adequate causes, and there is no reason to think that inflammation would occur under these circumstances.

Dr. T. BINKLEY: Many surgeons, I believe, place a suture so as to draw together the top of the vagina, which usually decreases the opening vagina. I have seen this practiced many times and have never seen vaginal hernia follow hysterectomy.

THE STATUS OF GYNÆCOLOGY ABROAD.

By HIRAM N. VINEBERG, M. D.

FRANCE.

A Report of Twelve Cases of Pregnancy following Salpingo-oöphoritis.

Dr. F. FRAIPONT (*Nouv. archiv. d'obstet. et de gyn.*, 1894, No. 11) strongly urges conservative treatment in salpingo-oöphoritis and deprecates the radical removal of organs by surgical means. He reports twelve cases more or less in detail of disease of the annexa to a greater or less degree, some attended with a considerable exudate in which he followed conservative measures. In all there was an apparent *restitutio ad integrum*, the patients becoming pregnant and going to full term having a good puerperium. The treatment in the main consisted

of hot baths, douches, and vaginal medicated tampons with the addition in a few instances of curettage. [It must be stated however that in all the disease followed either a miscarriage or puerperal infection at term, and that with one exception the duration of the affection was less than a year, in some instances being only a few months. These are the cases that notably offer the best prognosis for conservative medical treatment. He would need be a rash operator indeed who would subject to a radical operation a woman who had a salpingo-oöphoritis of recent origin following a miscarriage or a birth at full term. Any one with any experience will know with what rapidity comparatively large exudates of such origin will disappear under general local medical treatment.]

Affections of the Eyes due to Dysmenorrhœa.

Dr. GALLEMAERTO (*Archives de tocologie et de gynécologie*, January, 1895) reports two cases with functional affection of the eyes due to dysmenorrhœa (?). The author gives a brief review of the work in this direction. The acuteness of vision and the field of vision during menstruation has been studied by Finkelstein. The author found that there was no change in central vision, but that there was a contraction of the field of vision, which commenced two to three days before the period, attained its maximum on the third or fourth day of menstruation, and ceased about the eighth or ninth day. This change of the field of vision was attended with other nervous phenomena, such as headache, palpitation, etc. The contraction was not alone for white, but also for red, yellow and blue.

A Case of Fibro-myoma of the Uterus recurring as Sarcoma.

Dr. O. LAURENT (*Archives de tocologie et de gyn.*, Janvier, 1895) performed an abdominal hysterectomy for uterine fibroid in a patient forty-four years of age. The pedicle (evidently the whole uterus was not removed) was sutured to the abdominal wall. The patient fell on her abdomen three years later, and one year later still again consulted Dr. Laurent for a swelling of the abdomen. He found a tumor the size of an adult head originating from the stump which had been left behind. The whole tumor could not be extirpated; the part that was removed on microscopic examination was found to be a sarcoma of the fusiform variety. The growth soon recurred and the patient died four months after the second operation. The author asks the question whether the traumatism could have been the existing cause of the development of the sarcoma.

Primary Cancer of the Body of the Uterus.

Dr. J. GODART (*Bull. de la soc. de gyn. et d'obs.*, 1895, No. 1) recognizes two forms of adenoma—a benign and malignant form. He reports two cases in which the malignant variety was discovered with the microscope; in uteri, that Dr. Jacobs had removed because there was bilateral disease of the annexa. The malignant nature of the affection was scarcely suspected before the operation, and the author adduces these instances as favoring the position of those who remove the uterus in every case where it no longer serves any physiological function but may be a menace to the future health of the woman. In the discussion that followed some doubt was expressed as to the description of the microscopic appearances tallying with epithelioma. Dr. Jacobs stated that the condition found was one of malignant adenoma and not of epithelioma. But was not malignant adenoma the forerunner of general epithelioma? He cited the case of a woman who was cachectic and had chronic metritis. He performed hysterectomy. The microscopic appearances were doubtful; the most that could be suspected was malignant adenoma. The woman returned a short time ago with a recurrence in the vaginal *cul-de-sac*.

GREAT BRITAIN.

Subinvolution and its Treatment.

Dr. JAMES BENNETT (*Edinburgh Med. Jour.*, December, 1894) treats this subject at some length. He says in this country four weeks, on the Continent six weeks is the term in which a return to the normal condition is expected. It is of the utmost importance that we should find the uterus free after parturition at full time, or abortion, the fixing of the organ by cellular effusion often passing unobserved, and is no doubt a frequent source of subinvolution. In subinvolution the nervous power is so altered in its constitution that vascular congestion of an immoderate amount is permitted, which in itself further increases the mischief by paralyzing the nervous control over the emptying channels, the loose cellular tissue of the lately pregnant being well suited for such lesion to occur.

The treatment should consist in oft-repeated scarifications, and in severe cases cupping of the cervix should be resorted to. Hot-water injections in accordance with the teachings of Emmet are beneficial. Support to the heavy organs may be given by a Hodge pessary or glycerin tampon. The use of the warm spinal douche is attended

with the most signal benefit. Ergot and strychnine internally are warmly recommended. The ergot, mixed with glycerin, may be injected within the uterus (*sic!*). Nitrate of silver, pure nitric acid, or the dried zinc points, or the curette have each been used at various times and may occasionally prove serviceable.

[We might remind our English *confrère* that instead of these obsolete remedies, pelvic massage has proved of great service in this class of cases. To any one who uses this agent for the first time it will be a matter of surprise how the organ contracts during a treatment and how it permanently diminishes in size after a few *séances*.]

PÆDIATRICS.

Dentition as an Ætiological Factor in the Maladies of Early Life.

DORNING, JOHN (*Archives of Pædiatrics*, February, 1895) considers that this always interesting, though apparently never settled controversy is viewed from *three* different standpoints. *First*, the antiquated doctrine that dentition is a painful process, attended with danger to the health and life of the child, and is also the immediate and remote cause of many of the maladies of early life. *Second*, that normal dentition does not give rise to local or general disturbance but may, in *difficult* dentition, be attended with discomfort, local and constitutional, and may be the direct or indirect cause of disease or may influence the course of an existing malady. *Third*, that dentition being a physiological process should be and is unaccompanied by any morbid manifestations that can rightly be attributed to it. Incalculable harm has been done by making the teeth a scapegoat for ignorance of the infant economy. There is no unanimity of opinion as to whether or how the *modus operandi* of dentition is a painful and dangerous process. Some claim that the cutting of the incisors on account of their sharp edges is more painful than the extrusion of the molars; others, that the eruption of the molars causes more pain on account of their broad crowns; that the stomach teeth cause vomiting and diarrhœa, that the molars cause most cerebral and intestinal troubles; the forward pressure on the gums, the backward pressure of the fangs, the lateral pressure of all the teeth together—each has its advocates to account for other complicating ailments.

The period of dentition is generally restricted to the time when the crown penetrates the gum, and yet it commences at the sixth week

of uterine life. At birth calcification of the crowns of the incisors is quite complete and the roots are beginning to calcify. Three months after birth the cuspid and molar crowns are complete and calcification then commences in their fangs. With the completion of the crown and beginning calcification of the fang the process of eruption commences.

The eruption of a tooth represents a slow physiological growth and absorption and is not forced through like a spike through leather. It may be compared to the growth of long bones. Many of the indications of the perturbing power of dentition may be attributed to other causes. The salivary glands and the teeth develop simultaneously and the drooling that is supposed to indicate irritation caused by the cutting of the teeth may simply like the eruption of the teeth indicate a stage of developmental activity in which there is a preparation of the digestive apparatus for the reception and utilization of the aliment that is to succeed the maternal milk.

Feverishness, restlessness and fretfulness and disturbed sleep are the commonest manifestations of infantile derangements. Often they are coincident with the eruption of a tooth.

Often trifling disorders that are viewed as evidence of difficult dentition are directly or indirectly dependent upon rhachitis. The reputed diarrhœa from teething has been attributed to the swallowing of large quantities of saliva, to the absence of saliva in the stomach and to nervous irritation. Diarrhœa may occur at the time a tooth is protruding or at successive periods of dental evolution but, as a matter of fact, never in consequence thereof.

Convulsions in the majority of cases are traceable to some irritation in the alimentary canal. Rhachitic children are peculiarly liable to them. In fact all of the so-called "symptoms" may have other causes than that of teething.

The author mentions gum lancing only to condemn it.

Neuroses of Childhood.

RACHFORD (*Archives of Pædiatrics*, February, 1895) laments the fact that so little is to be found in our text-books concerning the peculiarities of the nervous system of infancy and childhood, as they have a most important ætiological import in the study of the neuroses of childhood. At birth the brain is morphologically and functionally the most immature of all the great organs of the body. At seven years of age the brain has attained ninety per cent. of its maximum weight and after this slowly increases in weight up to the age of eight-

een ; but increase of function does not keep pace with increase of weight. In other words the brain of a child of eight is almost as large as the brain of an adult, but the difference between what the brain of a child of eight and the brain of a man of twenty-five can do and can resist is quite indescribable. "The organ at these two periods might belong to two different species of animals so far as its essential qualities go."

The author calls attention to the following important facts :

1st. At birth the nervous system is structurally but more especially functionally immature.

2d. Throughout infancy and childhood the brain normally undergoes rapid structural development.

3d. Throughout the entire period of infancy and childhood the brain normally undergoes rapid functional development.

4th. Innumerable conditions of heredity and environment have much to do with the rapidity and the order of development of the functions of the nervous system of the normal child as well as the failure and retardation of their development in the abnormal child.

5th. The metabolism in the normal immature nerve-cell of the child must be rapid enough not only to supply the functional waste but also to supply the material for the growth and development of cells.

6th. This structural instability of the functionally weak and immature nerve-cell of the child makes it much more irritable and excitable than the stable, mature nerve-cell of the adult.

The feeble inhibition of nerve energy is peculiar to childhood. This is a potent factor in the production of neurotic diseases in infancy and childhood.

Lack of sensitiveness of the motor areas of newly born animals has an important bearing on the study of reflex neuroses.

ITEM OF INTEREST.

THE GYNÆCOLOGICAL, OBSTETRICAL AND PÆDIATRICAL CONGRESS AT BORDEAUX.

We have been requested by the General Secretary, Dr. LEFOUR, to announce that the above Congress will convene on *August 12th* and continue until the 15th, each department under its respective president. The order of subjects for discussion will be, in GYNÆCOLOGY, *Uterine Displacements* ; in OBSTETRICS, *The Treatment of Puerperal Septicæmia* ; and in PÆDIATRICS, *Hip Disease and Club-foot*.

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FURTHER EXPERIENCE AND OBSERVATIONS IN HYS-
TERECTOMY FOR FIBROIDS.*

BY S. C. GORDON, M. D., PORTLAND, ME.,

Lecturer on Diseases of Women, Portland School of Medical Instruction ; Surgeon Maine General Hospital ; Consulting Surgeon Maine Eye and Ear Infirmary ; President Maine Academy of Medicine and Science ; Ex-President Maine Medical Association ; Ex-President Section of Obstetrics and Gynæcology, American Medical Association ; Fellow British Gynæcological Society, Council 1892.

Two years ago, in a paper read before this Society, I used the following language : " I fully believe, if it were the rule in every case of fibroid of the uterus to make hysterectomy before the patient was exhausted by hæmorrhages, peritonitis, salpingitis, and consequent invalidism—in short, if we operated upon all cases in the early stages, as we all advise for cystoma of the ovary—that our mortality would be no more, and at the end of a year we would have a much greater sum of human happiness and relief to physical suffering."

This and other papers on the same subject gave rise to one of the most animated, exciting, and interesting discussions in the whole history of the Society. My friend, Dr. Mundé, severely criticised my position, and declared that in his own experience and practice only about "ten per cent. of the cases he had seen required treatment" (presumably surgical treatment). Farther on in the discussion he

* Read before the American Gynæcological Society, May 28, 1895.

says, "In my opinion at least seventy-five per cent. of these do not require an operation, or, indeed, any surgical treatment."

Fortunately for the credit of the profession, as I believe, the large majority of those who took part in the discussion did not indorse Dr. Mundé's views, while many, and notably those of large experience, more nearly approved the position I assumed in my paper.

The general sentiment was in favor of removing all uteri containing fibroids that had given the woman sufficient trouble to cause her to seek relief. The great point of difference was as to what would really be the degree of suffering to justify surgical interference.

Believing now, after two years of much larger experience, that any discovered fibroid may soon or late become a source of trouble and the foundation for invalidism, I honestly and conscientiously adhere to the position then taken. I have steadily and uniformly followed the practice of the principle then laid down, and have seen no reason to regret it. In every case where I had the consent of the patient I have made hysterectomy, and in a large majority of the cases complete hysterectomy, as advocated in a paper read before the American Medical Association in 1892, entitled *Hysterectomy without Pedicle*. The more I make this last operation (complete hysterectomy) the better satisfied I am with results. I rarely have unpleasant complications arising after. In several very recent cases, where I have removed the entire cervix, there has been an uneventful recovery, with scarcely a rise of temperature. However little of the cervix is left, there will always be more or less danger from septic material in the cervical canal, and although one may cauterize by the very best methods, pus may result. Again, I do not close the vaginal opening so completely as to prevent serous drainage between the sutures; and inasmuch as I rarely use drainage in any other form, I am sure that this proves sufficient. In all cases the utmost care is taken before operation to render the vagina as aseptic as possible. I also instruct nurses to use a douche (1 to 5,000 bichloride) every day so long as a discharge continues. Within a year past I have had no death from hysterectomy made for fibroid of the uterus—about twenty operations in all; nearly half have been complete, the others some portion of the cervix has been left. The difference in rise of temperature, pain, and other complications has been very strikingly in favor of complete extirpation. The principal objections, heretofore, have been the increased length of time required to perform the operation, but my own experience confirms me in the belief that but little more time is required now than was formerly demanded in the partial removal. Having the

complete removal in view at the commencement, one can save much time that was formerly spent in minor details of a different operation.

The difficulties of any hysterectomy come largely from complications that have arisen from delay, and this is especially true in making the complete removal. No uterus can long remain normal that contains a fibroid. Septic material may and frequently does extend into the Fallopian tubes, thence into the pelvic cavity, where peritonitis results in suppuration, exudate, and adhesions that bind down the cervix, so that it becomes almost impossible to enucleate or dissect it out. This I have found a frequent complication. Fibroids become multiple, occupying all parts of the uterus, and extending into and changing the position of the broad ligaments, displacing the ureters, and fixing portions of the intestines by contact with the congested peritonæum. The whole circulation is modified and becomes pathological, the veins of the broad ligament are varicose, the tissues become friable, increasing the danger from hæmorrhage during the process of removal. To my mind, the chief danger in long operations lies in the amount of blood lost, rather than any shock to the system otherwise. "Death from shock," when analyzed, as a rule, means death from hæmorrhage. I speak from my own experience and observation of other operators. It is not a mere theory I have formed, but comes, as all theories in practical surgery should come, from practical work.

It is often said, especially by men who take what they term the "conservative" side of treatment of fibroids, that in a majority of cases the patient goes through life and is not rendered an invalid by the growth, but enjoys a degree of health and comfort that the average woman enjoys. Most careful and searching inquiry, on my part, among such women shows the reverse of this to be true. First of all the knowledge of such an unnatural growth is a constant source of anxiety and worry of mind, which is worse than physical suffering. The dread of some complication is always before them, to say nothing of the disagreeable deformity that they cause after they are large enough to rise above the pubes. In the case of an unmarried woman this last-named feature becomes exceedingly annoying. Add to this the well-marked invalids that barely exist, unable to take life's burdens and cares or even be free from daily suffering, we have a factor that weighs much against the slight risk of hysterectomy.

Homans, in an article published in the *Boston Medical and Surgical Journal*, March 7th, ult., speaks more strongly than ever before in favor of the operation. He gives eleven reasons why he advises operation,

while practically he gives but one reason for not operating—viz., when the tumor gives no trouble, uneasiness, or disturbance, and the patient does not desire the removal. The last part of this reason always settles the matter, while the first part, in my experience, is extremely rare. He adds, “but I operate more frequently than I used to.” Out of six hundred and fifty fibroids he had seen he operated upon ninety-three; but says: “I should have done well to have operated upon a greater proportion of them. He estimates that the “mortality from all cases, promising and unpromising, varies from three to ten per cent.”

Following the rule I have laid down, “to operate on all cases as early as discovered” and by “*complete hysterectomy*,” in my opinion, the mortality will be no more than the minimum—three per cent. Can we ask more than this for abdominal section for any cause?

Left until an absolute necessity compels the operation (as claimed by our “conservative” (?) friends), we will find a mortality far exceeding the maximum, to say nothing of the dangers from death by hæmorrhage and peritonitis, and the years of physical and mental suffering. There will always be a certain percentage of cases that will undergo malignant and other degenerations and complications that will render impossible any attempt even at removal.

The size of a tumor is by no means the measure of the suffering it may occasion, the largest oftentimes being less troublesome than small ones. I have within a few weeks removed a uterus containing two fibroids no larger than acorns. They had caused hyperplasia of the corpus and a complete and very sharp retroflexion. The woman had been an invalid for years and I proposed ventro-fixation to relieve the displacement, to which she assented. Exploratory incision showed the true condition and I made hysterectomy. I have no doubt of its complete success so far as restoring her to health and comfort. Another case, a week later, showed three very small tumors, so placed in the pelvis as to render an operation very difficult and dangerous. Pressure upon the uterus had produced much atrophy of the organ, the function had become considerably impaired, and the lady had been an invalid to the extent of depriving her of all social privileges and enjoyment for many years. Yet the largest of these fibroids was no more than two inches in diameter. Rapid and uneventful recovery followed. I have no doubt as to complete recovery of health in this case. These are only samples of many such cases that occur under the eyes of frequent operators.

As this paper is merely a brief summing up of my own experience,

I forbear quoting at any length from any authorities. The journals are full of articles bearing upon the subject. Homans says, "I doubt if one man could read in a day the communications published during twenty-four hours on this operation." All this shows the manifest interest in the subject. The profession seems fully awake to it, and hasten to put themselves on record in favor, rather than against surgical interference. Judging from all these indications, one must be led to believe that hysterectomy for uterine fibroids, as a rule, has come to stay, and that a much greater percentage than "ten" will be removed in this way, whether it is best or not. If the "education" in this direction does not result in tempting men who have not had experience in abdominal surgery for other causes, many a suffering woman will be relieved.

That the operation is much more difficult than abdominal cases generally, I think will be readily granted by men of large experience. Especially is this true in cases of long standing, where adhesions and complications exist—then indeed it becomes actual manual labor. Almost every man has his own method of operating. I have never changed mine since I adopted the *continuous suture with catgut* about twelve years ago. So far as I know, no one who has written on the technique of the operation has ever adopted this method. Most men seem afraid of the catgut suture. Since 1884 I have used no silk, silver wire or any form of suture or ligature aside from catgut in the abdominal cavity or out of it, with the single exception of silkworm gut for closing abdominal wounds. I have never regretted its use, and have had, in my opinion, no unpleasant results, which would not have occurred with any other form of suture or ligature. With well-prepared catgut I feel the utmost safety both as regards aseptics and freedom from hæmorrhages after operation. It has a special advantage over many forms of ligature, in that you can use it freely by continuous suture where the same amount of silk would be a great objection. In this special operation after placing a long clamp beneath the ovary and tubes, with a strong curved needle threaded with No. 4 or 5 catgut, I ligate a portion of the broad ligament an inch below the clamp, carefully fastening by over-and-over sewing this part. I then cut between the clamp and ligature, and as fast as I cut continue the over-and-over suture, always keeping one loop ahead of the knife or scissors. In this way I close the broad ligament as soon as cut. When I have divided the broad ligament down as far as the uterine artery, and before cutting it, I carry an incision around the uterus in line with the last suture, through the peritonæum which I

dissect off both in front and behind, continuing the suture as before—this includes the uterine artery, and no blood is lost in the average case, where the tissues are not impaired in their integrity. A little care and patience soon relieves the cervix, and by that time the continuous suture has nearly closed the vaginal opening, so far as I care to do so.

As I said in a former paper, I have tried the various other methods for hysterectomy, but at last settled on this, which I find much easier than any other I know at present.

The advantages I claim for it are: 1. In my hands it is easier to do than any other method. 2. By using catgut one has less fear of strangulating the tissues on account of its elasticity. 3. By the continuous suture one can always have the blood-vessels under control by carrying a loop of the suture below the point of division, before cutting the vessel. 4. If tissues are weak and fragile from inflammatory action, the catgut suture can be used in any direction to almost any extent, in the event of annoying bleeding. 5. Absorption of catgut always takes place, so that there is much less danger from fistulæ following, which so often occur when silk is left in the pelvic and abdominal cavity. 6. In my experience, no casualties have followed its use that may not have followed any kind of suture.

Many operators can possibly remove the uterus more rapidly by their own methods, but the time necessary to secure all bleeding vessels and completing the toilet will make the entire operation as long as mine. When I take my last suture the vessels are all secure and the rest is rapidly finished. I have seen the uterus removed in ten minutes, but from half an hour to an hour was spent in getting the patient ready for bed. This I call "playing to the galleries," and is not scientific surgery. I find very little trouble from prolonged operations, provided hæmorrhage is avoided and prevented; with plenty of gauze and hot towels the intestines can be kept warm, and no shock follows from even hours of exposure.

In conclusion, I can only say, that further experience and careful observation justifies me in reasserting my belief, so strongly expressed two years ago, that in all cases where a woman finds herself an invalid from a fibroid uterus to the extent of seeking the advice of a surgeon, unless such tumor can safely and easily be removed *per vaginam*, either by enucleation or morcelllement, true conservative surgery demands hysterectomy, and, in my experience, I have found the abdominal method by far the preferable one.

I expect criticism upon my method of operating by continuous

suture with *catgut* as the material. I think I may safely say that it is entirely original with me, and therefore I am perfectly willing to submit to whatever discredit attaches to the method. It has served me well for ten years, at least, and several of my friends in the profession are abundantly satisfied with it.

157 HIGH STREET.

THE USE OF TRACTION AND MORCELLATION IN THE REMOVAL OF FIBROIDS *VERSUS* HYSTERECTOMY.*

BY THOMAS ADDIS EMMET, M. D., NEW YORK.

The method to be described for treating fibrous growths of the uterus by traction and morcellation is one yet but little known to the profession, notwithstanding it has been practiced in this country by myself for many years.

While the subject is limited as to a special mode of treatment, it is earnestly hoped that the discussion on it may be so directed as to determine within a reasonable limit the circumstances under which the uterus should be removed. I bring forward the method with the firm belief that, if properly practiced, it will be the means of greatly reducing the number where total extirpation would be resorted to if we could not have the benefit of such a procedure. We are yet in a transition state, when the tendency is always to run into one extreme or the other. But experience has long since taught me that the truth seldom lies in either extreme. Consequently I will no more accept the view that the uterus should be removed, from the fact that a fibroid exists, than I will condemn the operation with the dictum that it should never be performed.

Unfortunately the operation for removal of the uterus is not, under ordinary circumstances, a difficult one of execution; were it otherwise it would not be so necessary, in attempting to check the abuse, that public opinion of the profession should not only be heard at this stage, but heeded. The abuse is due to the enterprising spirit of different members in the profession seeking for what is thought by them

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to be progress, but, owing to the extreme views so frequently held, the result is malpractice. In the name of such progress the uterus is being removed for procidentia, for different forms of prolapse of the vaginal walls, and it is but a few weeks since I saw a young woman, then a hopeless invalid, whose condition was caused, during the past winter, by the removal of the uterus, tubes and ovaries, for the reason that she had not been relieved after an attempted operation for laceration of the cervix! Further comment is unnecessary.

Almost every operative procedure in surgery has within a limited space a legitimate place, and when needed it should be performed. If we grant this proposition to be true we must hold that when an operation is performed unnecessarily it is malpractice.

To remove the uterus in consequence of the existence of a fibrous growth, from which the woman may have suffered but little, is not, in my judgment, justifiable. To extirpate the uterus before thoroughly exploring the uterine canal is equally reprehensible. Frequently a secondary growth projecting into the canal is the immediate cause of the loss of blood, and until an effort had been fairly made to aid the advance of the growth for its removal, it is impossible to decide as to what the exigencies of the case might require. And lastly, the most important point of all to determine, after locating a uterine tumor, is in reference to the rapidity of its growth. I exclude the tendency to loss of blood as the least urgent symptom or need for the operation of removal of the uterus, since it is possible, with the proper surroundings, to hold this in check for an indefinite period. It is but reasonable that this delay should take place whenever the slightest prospect of a good result exists. We will not discuss the death-rate after removal of the uterus for a fibrous tumor, as this doubtless can be made more favorable, but we will consider the condition of those who survive as offering the chief objection to the operation under any circumstances but the most urgent. We have reached a stage in the history of this operation where the testimony must be heard of those who have to take charge of the cases after the surgeon has already received full credit for a supposed successful operation. Their testimony would be that too large a proportion of these women remain invalids after the uterus has been removed. This has certainly been my experience in having the patients of other operators under my care, and instances have occurred in my own practice where I had felt the operation was called for, but the result afterward has shaken my confidence. I have indeed seen remarkably good results, but with many I have been in doubt as to the gain in getting rid of one set of symp-

toms by the substitution of others entirely new in character, and which are attended often with even a greater degree of invalidism.

Sometimes as a cause of their suffering we may find among these women a certain proportion with more or less sagging of the roof of the pelvis, while others suffer from prolapse of the bladder, of the urethra, or of the whole vagina. So long as we are thus able to detect any abnormal condition we can at least be encouraged by the hope of being able to offer relief. But unfortunately there remains a number of women, after the uterus has been removed, who continue invalids from some unknown cause, as no special lesion can be detected. Under these circumstances, if the statement be true, and I think no one will charge me with having exaggerated the condition which does frequently exist, we must all ultimately reach the same conclusion. This will be that the operation for removing a uterus containing a fibrous growth should only be resorted to when absolutely necessary, and, I will add as the result of my own observation and personal experience, only to save life. My experience is not a recent one, as the length of time which has passed since my first operation for removing the uterus with a fibrous growth has been probably longer than that of any one within reach of my voice, and I can claim to have had some good results and some very unsatisfactory ones. For years past I have honestly striven to define, if possible, the limit of necessity for this operation, and have consequently been misrepresented as opposing it under all circumstances, which is an absurdity.

At the present time it is in accord with my judgment that the more rapid the growth of a uterine tumor, the more urgent the necessity for total extirpation, and I hold this view without reference to the tendency to hæmorrhage. The rapid growth is either indicative of sarcoma, or of a condition where the tumor seldom becomes pedunculated, as the uterine tissues and those of the tumor are so blended as a rule, that it is impossible to enucleate the mass without great danger of perforating the uterine wall.

Under these circumstances, where an operation has been attempted and could be only partially done, and the patient has been weakened by a great loss of blood, death frequently results from blood poisoning. The necessity may arise for removal of the uterus where the tumor has become so large, or is so situated, that the proper examination can not be made, or the loss of blood controlled. But the danger from an operation is greatly increased with the size, so that a reasonable delay is warranted to ascertain if the limit has not been

reached in its growth, when the loss of blood may become modified. The age of the patient should have some bearing in determining the necessity for removal of the uterus. The existence of a rapidly developing fibrous growth in the uterus of a woman of twenty is a far more serious circumstance than it would be in one at forty years of age, if we are able to exclude the existence of sarcoma.

I have seen it stated by some recent writer, who was an advocate for removing the uterus under almost all circumstances, that a woman suffering from a fibrous growth could have nothing to look forward to after reaching the menopause, and he made the additional assertion that no change ever took place at that time. This is simply a haphazard statement. It is my belief that no one in the profession, at home or abroad, has given more attention than I have to this subject, during the past thirty years. I am justified, on this experience, in making the statement that with a large proportion of cases, who have suffered from fibrous growths of the uterus great changes do occur at the time of the menopause or after that time—in what proportion it is impossible to ascertain, but the numbers are certainly sufficient to anticipate for many some amelioration at that time in their condition. I certainly have seen tumors of fair size disappear at this period of life, others have decreased in size, many have remained stationary for years after, while I can recall but a few instances where the tumor increased rapidly in size after a change of life had taken place. It must also be borne in mind that these growths sometimes disappear as the result of pregnancy, and not infrequently their growth becomes self-limited in consequence of the pressure exerted on their blood-vessels, and these have been known to frequently disappear, or their development to become arrested from the same cause. As these facts are in accord with my experience I can not in justice to my own judgment accept without question the teaching advocated by those who favor an indiscriminate removal of the uterus for fibrous growths. I have stated that this subject has occupied much of my attention during the past thirty years, and I may add it is my honest belief that no one has succeeded in removing a greater number of fibroids from the uterine canal than I have done in the same period. It is from an intimate knowledge as to how much good can be accomplished that I have been induced to present this subject for your consideration and have done so notwithstanding it necessitates frequent reference to my own work. Nothing is more distasteful, but in justice to myself I must do so, as I originated the method I am to treat of and have continuously practiced it for over thirty years. Yet

it is now coming back to us from abroad as an original method, with a foreign indorsement and title of "Treatment by Morcellement."

Velpeau and Amussat were the first to enucleate, or, by force tear these growths from their bed, and Dr. Sims at an early period of his professional life forcibly separated a fibroid with a stout steel instrument and afterward Dr. Thomas introduced the serrated scoop. But by all these means more or less damage was done to the surrounding uterine tissues, and a cavity was left with a roughened surface which sloughed more or less before the space could become obliterated. The procedure I originated is entirely different, and consists in firmly seizing a growth with a large tenaculum or double hook and by traction to excite sufficient uterine contraction to displace the mass, and at the same time by the contraction excited to close up the space which had been occupied. Elsewhere I have stated: "This action may be illustrated by the removal of a body from a mass of India rubber. If the rubber were stationary and sufficient traction was made with a tenaculum, on the body buried in the mass, the process would be similar to that by which a tumor becomes pedunculated. We have substituted force for the action of gravity, and the natural elasticity of the rubber may be likened to the muscular action of the uterus. Now, when the body is drawn out from the mass it brings with it a portion of the rubber in the shape of a pedicle, and no cavity will remain, since the elasticity of the rubber is sufficient to cause it to close in behind, *pari passu* with the advance. And so when traction is made on a tumor, with the effect of exciting sufficient muscular action, the space which was filled by the growth will immediately become obliterated, or at least, there never will remain more than a small and unimportant cavity. Great care is taken to do as little damage as possible to the tumor until it is evident that the uterus is contracting sufficiently to aid in displacing the mass and at the same time to obliterate the cavity."

Unfortunately the case books for the first six years of my service as surgeon in chief of the Woman's Hospital were lost, or rather stolen, some years ago. These six years included much of interest in connection with the development of gynæcological surgery, and this period covered the most active portion in original work during my professional life. In consequence of this loss I can not state positively when I began the method of making traction and of removing these growths piece by piece as the mass was displaced into the canal. But my recollection is very clear in reference to one fact, that it was in such an operation that I made the earliest use of the differ-

ent curved scissors I had devised. I hope I may be excused for the digression, but while I am substantiating my claims I may well place on record in this connection that the profession is indebted to me for the introduction and general use of scissors in surgery. With the use of different curved scissors many operations in plastic surgery were rendered comparatively simple of execution, which would have been almost impossible with the knife. But in no class of operations have these scissors been of more practical service than within the uterine canal for the removal of fibrous growths. My impression is that during the winter of 1861 and 1862 I first employed traction for the purpose of removing fibroids and shortly after used the scissors. However, I will quote from a paper termed "Treatment and Removal of Fibroids from the Uterus by Traction," which was read by me before the Medical Society of the State of New York in February, 1875, and was published in the volume of *Transactions* of the Society for that year.

I shall make an extract at some length from this article and cite several of the cases which are equally as well fitted now for illustrating the subject, as they were when selected for the purpose over twenty years ago.

"It is my belief, as the result of observation, that fibrous tumors become pedunculated only when situated at a point where the force of gravity can be exerted. This force acts as a source of irritation to excite the muscular fibers of the uterus to contraction. I have also noted that the muscular fibers throughout the whole organ do not contract equally.

"But there are many cases where the tumor is not so favorably situated, where the action of gravity can not be exerted, and where uterine contraction, if excited, is lost and inert in displacing the tumor from its bed.

"For the relief of a large number of these cases it has been my practice to excite uterine contraction by making traction on the growth. This action I have continued until the tumor becomes pedunculated from being crowded out of its bed by muscular contraction closing in around and behind the mass. As an illustration of this action we may imagine the removal of a body by traction from a mass of India rubber, where the contractility of the substance would be sufficient to close in behind, as the advance was made, and obliterate the cavity on the withdrawal.

"My attention has been directed to this subject for a number of years, but the development of my views to the present standpoint

has been very gradual. But I can not demonstrate this progress better than to present somewhat in detail several prominent cases, which have stood by the way as so many signposts.

"In 1863 a patient was admitted to the Woman's Hospital with a fibrous tumor, distending the uterus to the size of full term, a portion of which filled the vagina and had already begun to slough. I could form no idea by a digital examination as to its attachments. I applied a pair of forceps, with the view of delivering the mass until I could reach the base, around which I intended to have applied the chain of the *écraseur*. My efforts, however, were fruitless, as the tumor was too large above to enter the pelvis. Fearing to leave the patient in this condition, I passed, with the aid of Gouch's cannula, a stout twine around the mass, as high up as I could, within the uterine cavity. To the end of the cord I made a slipknot and strangulated the mass to control the hæmorrhage which I anticipated. Steady traction was made on the cord by an assistant, for fear that hæmorrhage would occur should the noose become relaxed. I proceeded to remove the mass, piece by piece, with the aid of a large tenaculum and a pair of properly curved scissors. After I had taken away a large portion, I was surprised that the vagina continued to be occupied by about the same-sized mass as at the beginning. But I was so much occupied with the work immediately before me, that I did not notice the gradual decrease in the size of the uterus until near the close of the operation. As I advanced the cord was cut by accident. There was no bleeding, so I introduced my hand within the vagina and proceeded with the operation by pulling down, with the tenaculum, portion after portion, until the pedicle was reached. I thus removed the whole tumor with scarcely the loss of an ounce of blood after the traction had been commenced. I noted the blanched appearance of the mass remained the same after cutting the cord as the strangulated portion did after the blood which it contained had escaped. It was a matter of the greatest surprise to me, for which I could offer no explanation, that the pedicle for such a mass should not have been larger in diameter than the index finger. Previous to the operation I had supposed the greater portion of the tumor was buried within the uterine tissue. At the termination of the operation the uterine canal was barely five inches in depth. The mass contained a number of cysts of various sizes, and the quantity of fluid which escaped could not be estimated, but the pieces of the tumor weighed together nearly seven pounds. The patient recovered without a bad symptom.

“From this time I have seldom used the *écraseur*, but have removed with scissors any growth within the uterine canal which I could reach. I have had no fear of hæmorrhage, for this case taught me that it could be controlled in the manner I have described.

“In February, 1867, a patient was admitted to the Woman’s Hospital with a large fibrous tumor imbedded in the greater portion of the anterior wall of the uterus. The tumor encroached on the uterine cavity, but only so far as to give a marked curve to the canal, as nearly the whole was interstitial. The case was under the care of Dr. John G. Perry, then one of the assistant surgeons, who, by my advice, continued the use of sponge-tents for some two months or more. After an absence of several weeks she returned to the hospital in consequence of continued pain from uterine contraction. The os was found dilated to some four inches in diameter, with the tumor presenting as a child’s head. A broad attachment could now be felt just above the vaginal junction, somewhat less in width than the portion of tumor occupying the canal, while previous to leaving the hospital merely a uniform projection existed. June 3d, I operated by passing well up into the canal a large tenaculum, and by steady traction drew down or rolled out into the vagina a large portion of the mass. I took out with a pair of scissors a large wedge-shaped portion, and as the traction had already excited uterine action, I removed piece after piece, as the tumor could be drawn down, until the uterus had been emptied. When the pedicle was divided it was less than half an inch in diameter, and was formed by the capsule covering that portion of the base of the tumor which was nearest to the uterine outlet at the beginning of the operation. The location of the pedicle at this point, I have noticed, has been without an exception. I have referred to the recorded history of the case, and find that the depth of the uterus was not noted, but my impression is that it was eight inches previous to the operation. The lower portion of the base was felt just within the cervix, and the attachment of the tumor extended from that point to the fundus. The base therefore could not have been less than seven inches in length, with a width of from three to four inches. I purposely commenced the traction as high up as possible, and away from the lower portion of the base. I excited muscular action at the fundus, where it seems always to be greater than in any other part of the organ. As I rolled out the tumor from above, its separation advanced from this point downward as the uterus contracted on the diminishing size of its contents. The portions of this tumor weighed together four pounds and a half.

"A case similar to the first one given was admitted to the hospital in 1869, in the service of Dr. George T. Harrison. The vagina was filled by a portion of the tumor, which had begun to slough, and the patient already presented the symptoms of blood-poisoning. I used a cord for the purpose of making traction in the beginning, but afterward drew down the tumor as I have described, and removed it piecemeal. The pedicle was not larger than the index finger, yet previous to the operation I am certain that fully one third of the tumor was interstitial. This seemed to be the case, at least so far as the opinion could be based on the passage of the sound as an indication of the depth of the uterine canal. This tumor was also filled with cysts and their contents lost, but the portions removed weighed a little over five pounds.

"December 8, 1874, as I was about to commence my clinic at the Woman's Hospital, Dr. Whitwell, the house surgeon, informed me that he had been obliged to substitute a patient just admitted, for operation, whom I had not examined. While she was being etherized I learned that during her last labor, three years previous to admission, her physician had been obliged to remove a large growth from the uterine cavity, which had obstructed the delivery. Menstruation had been free, lasting a week; and for a profuse leucorrhœa, with a constant bearing down and a backache, she had sought relief. The doctor had examined the case and reported the existence of a large mucous polypus projecting from the os uteri. The speculum exposed a soft vascular growth as large as an English walnut, with an attachment to the posterior lip almost as great. There had been double lateral laceration of the cervix, and although this growth was outside of the uterine cavity, it really sprang from a surface which formed a part of the cervical canal before the accident. The appearance of the tumor was unusual and led to further examination. I found the uterus very wide from before backward for its apparent depth, and from the rectum detected a deep depression near the fundus, as if from inversion. But the passage of the sound forward five inches indicated the presence of a fibrous tumor in the posterior wall, extending nearly to the fundus without encroaching on the uterine canal. The growth was very soft, and bled profusely in consequence of the tenaculum tearing out on making the slightest traction. I therefore resorted to my favorite means for the purpose—a cord with a slipknot. The tissue of the pedicle, which had been drawn out, was dense, and I soon discovered that it was inclosed within a sheath having an origin beyond the submucous surface. I divided with the scissors the sheath

around the supposed pedicle, close to the uterine surface, and proceeded to make traction as I separated the tissues with my index finger. I was soon satisfied that it was a portion of the fibrous tumor occupying the posterior wall of the uterus, and having advanced so far I had no alternative but to enucleate the whole tumor. In the course of half an hour I succeeded in drawing out from its capsule a mass some four inches in length, round, and of nearly uniform thickness throughout of an inch and a half in diameter. In the beginning, while making steady traction, I confined myself to separating the tumor from its capsule as it presented itself at the opening. The hæmorrhage was profuse and increased so rapidly when I had withdrawn about half of the tumor that I hastened the operation by introducing my finger and breaking up its attachment in advance. After the mass had been removed I found the cavity was two inches and a half in depth, with the remaining posterior wall of the uterus so thin that I was surprised it had not been ruptured. An equally thin septum existed in front, between the cavity and the uterine canal, which had not been entered. The traction had excited the muscular uterine tissue to action, and the size of the organ had materially lessened; but the posterior wall being so thin, the contractile force seemed lost in that direction. Notwithstanding the depth of the cavity had been shortened an inch and a half, it was my impression its capacity had been but little diminished, since its width was greater than that of the tumor after its removal. A portion of the capsule presented at the opening, which I seized with a tenaculum, and drawing down all which was loose, removed it with the scissors. The patient was now placed on the back, over a bedpan, and the cavity washed out with a quantity of very hot water, by means of a Davidson's syringe. She was afterward replaced on the left side, and Sims' speculum introduced, as at the time of the operation. The cavity was dried by a large sponge probang, and as soon as it was withdrawn two drachms of Churchill's tincture of iodine were injected. By use of the hot water the size of the cavity was greatly reduced and the bleeding diminished, but the iodine contracted it still more, and entirely arrested the hæmorrhage. Some pledgets of cotton saturated with glycerin were introduced into the cavity, now about an inch and a half in depth, and the vagina was moderately tamponed with cotton dampened with a solution of alum. On the second day after the operation all dressings were removed and the cavity carefully syringed out with warm water, to which had been added some carbolic acid. This treatment was continued from day to day without a bad symp-

tom presenting, and the cavity rapidly decreased in size. December 19th, eleven days after the operation, the temperature suddenly rose to 103° , and symptoms of blood-poisoning were detected. A speculum examination was made, and a sloughing mass exposed, which at first glance appeared to be the posterior lip. I found that it was a portion of the capsule protruding, behind which a cyst had formed, containing about two ounces of a thick gelatinous fluid. After puncturing the cyst I removed the remains of the capsule by means of scissors and by tearing it away with a strong forceps. There was some bleeding, but the quantity was not excessive. Curiosity prompted me to pass my finger to the bottom of the cavity, when I detected another fibroid, a little smaller than a pigeon's egg, just projecting sufficiently to map out its size. This I seized with a strong tenaculum, and as traction was made by Dr. Whitwell I cut it out from its bed with a pair of curved scissors. The uterus contracted promptly on its removal, and it was beyond question due to the presence and position of this little fibroid that the cavity had not been more reduced in size at the time of the first operation. I again injected the iodine, and as it excited the uterus to further contraction the bleeding was entirely arrested. January 7th I found the cavity from which this tumor had been removed now obliterated, and the uterus three inches deep. On the 12th instant she was discharged cured from the hospital."

The histories of other successful cases are to be found in my work on the *Theory and Practice of Gynecology*, and examples also are given showing the cause of failure and of death in other instances.

I have frequently seen where the removal of a single fibroid from its bed by traction has accomplished a radical cure. But occasionally the removal of such a tumor seems but to make room for others which develop rapidly, and have then to be removed one after the other.

The history of the following patient is of interest in showing how it is possible to hold these growths in check, and that a woman afflicted with them may be carried through a series of years, even to an improvement in her condition, with a very fair prospect of final restoration to health if she be able to resist, as I fear this patient will not, the urgency of some of her friends for extirpation :

Mrs. C. came under my observation for the first time early in 1882, when I saw her in consultation. She was then suffering from an enlargement of the uterus with some pelvic inflammation. I did not see her again until December 30, 1887, when she applied for admission to my private hospital, and the following history was then obtained :

Her age was thirty-two. She had menstruated for the first time at fifteen, was regular from the first, and continued in good health until she had reached nineteen years of age, when menstruation began to be painful. But, according to her statement, she took no care of herself, and committed every excess within her power by overexercise in dancing and horseback riding. After she had reached the age of twenty-one menstruation became very irregular, as well as painful, and she was frequently six months at a time without its appearance. She married at twenty-five and was sterile. For some time previous to marriage she had become again regular, with a flow lasting five days, and her general health was apparently fully established. But the first menstrual flow after marriage was too free, and with it she had constant pain behind the left hip which continued for eight days, accompanied by irritability of the bladder. She became an invalid from the time of this menstrual period. I found her local condition somewhat changed from what it had been five years before. The uterus was still enlarged but rather irregular in shape, and on the anterior wall, close to the junction with the bladder, a subperitoneal fibroid, as large as an almond, projected toward the bladder in the shape of a spur. The uterus had but little mobility in consequence of an extensive pelvic inflammation which existed on both sides and behind the uterus, a condition which had been caused, or had been greatly aggravated, by an ill-fitting pessary which she had worn for over a year without having had it looked to.

Mrs. C. remained an inmate of my private hospital for a year before her condition admitted of dilating the uterine canal with safety, and in that time the uterus had nearly doubled itself in size, notwithstanding the surrounding inflammatory condition had been removed by treatment.

December 12, 1888.—The uterus was dilated with a large sponge tent; this was removed on the following day, and the vagina and uterine canal was washed out with a strong solution of the bichloride of mercury. Then by the use of graduated and large dilators the canal was sufficiently opened to form a diagnosis and for the removal by traction and scissors of two fibrous growths. One of these was as large as a hen's egg, and was almost entirely buried in the posterior wall; the other was situated in the fundus, and was as large as a pigeon's egg. I suspected from the shape of the uterus that another growth was developing in the fundus, but was unable to detect its situation. In this operation I was assisted by my son, Dr. J. Duncan Emmet, and by Dr. Buckmaster.

On January 28, 1889, with Dr. Frederick Whiting to administer the ether, and with the assistance of Drs. J. D. Emmet and Buckmaster, I proceeded to remove the subperitoneal fibroid from the anterior wall of the uterus, which had by this time grown as large as an English walnut. With a pair of scissors I carefully separated the bladder from the uterus, while steady traction toward the vaginal outlet was exerted on the vesico-vaginal flap until the bladder had been sufficiently separated and the tumor reached. Then, with a strong tenaculum, the growth was seized and drawn well down into the wound, fully in view, and so held until I had succeeded in separating the peritonæum, which was attached over the upper portion. Having done this without rupture the tumor was then twisted on itself by means of the tenaculum, which was deeply buried into the mass. The twisting was made with traction in one direction and then in the opposite one, while at the same time the mass was being separated from the uterine tissue with the finger nail as the parts presented at the surface. In a few moments the separation was accomplished, and notwithstanding the mass was apparently about one half buried in the uterine tissue, when it was drawn out the muscular tissue had contracted so promptly as to leave no cavity, and only a slightly depressed surface about an inch in diameter. The circular artery, which was very large on the right side, was pushed out of the way, but I felt it pulsating against my finger while working. I only regret that it did not occur to me to ligate it, which could have been done without the slightest difficulty. With a partially curved needle armed with the silk loop and silver wire I introduced seven silver sutures to unite again the bladder to the uterine wall. The first suture included more tissue than the others, and brought up the bladder in contact with the uterus, so as to close the wound from the peritonæum. As the angle of the wound was drawn by a tenaculum toward the vaginal outlet and the sides put on the stretch, each suture was passed from the vaginal surface through the connective tissue into the uterine wall so as to catch up a portion of the denuded surface, through the connective tissue on the other side and out into the vagina. Each suture included less tissue than the preceding one, until at length the bladder and anterior wall of the uterus were drawn together and restored to their original relation. She made a more rapid convalescence than she had done before, and her health became greatly improved afterward.

Early in 1893 the uterus began again to increase in size and the flow became more profuse. March 10th I concluded that the uterus

was being overnourished by an increased supply of blood which reached it through the old peritoneal adhesions, and I decided to open the abdomen, separate these adhesions, and, if possible, to remove the ovaries. I succeeded in breaking up a large number of these adhesions attached to the uterus, and which doubtless furnished it with a large blood supply, but was not able to find the ovaries or do more, as she suffered from shock. Her convalescence was very tedious, and for several days her condition was not promising; but she wonderfully improved after the operation and ceased to have any loss of blood, but at the menstrual period—in fact, when she could be induced to take care of herself the period would last but a week, and the quantity would not be excessive.

When I saw her last, toward the close of April, the uterus had become reduced at least one third in size, but in the shrinkage three sub-peritoneal fibroids had become more prominent. She is now over forty-two years of age, in good general health, and had passed six weeks without a period. Yet I found her nervous system upset through the influence of some friend who had been urging that she should have the uterus removed “to make a well woman of her.” The object of her visit was to ask that I would operate, as her confidence was as great in me, but I declined doing so for the several reasons just mentioned.

The use of ergot is, in my opinion, of doubtful efficacy unless it be employed under very favorable circumstances. It is certainly of no value for the purpose of expulsion if the tumor be so situated that gravity can not act, and unless the uterine canal be kept fully dilated at the time it is being administered. The injudicious use of ergot has done a great deal of harm by cutting off the proper supply of blood, with the consequent death of the tumor and blood poisoning afterward. The action of ergot is, I believe, exerted not directly on the muscular tissue of the uterus itself, but upon the muscular structure of the blood-vessels, and especially on those distributed to erectile tissue. Its action, therefore, is only an indirect one on the uterus, by causing the vessels to contract. By thus diminishing the supply of blood to the organ, its muscular tissue will contract upon itself to fill the space which would be otherwise occupied were the usual circulation maintained. I have known of a number of deaths from blood poisoning which resulted directly from the empirical use of ergot, and I can recall two instances of pyæmia with the difficulty increased by abscess in the parotids and of one in the liver.

The following case had been treated by large doses of ergot for

months before she came under my observation, and the treatment had been continued apparently without the slightest idea as to the pelvic condition, beyond supposing, from the loss of blood, that she had a fibrous tumor :

December 25, 1893, I was requested by Dr. Robert Milbank, of New York, to see Mrs. H. in consultation at one of the hotels. As a result of the consultation, and by his advice, she was admitted to my private hospital on the next day. I then obtained the following history :

Mrs. H., of North Dakota, aged forty-three, had menstruated for the first time at sixteen, with no trouble. Married at seventeen and had had one child fifteen years before by a natural labor. From the first menstrual period after this labor the flow had been too free, and for several years it came on every three weeks, flowing always very freely but with uncertain duration. She stated that she had been taking a preparation of ergot daily for some months, and as well as she could recollect there had been a tendency for weeks to fever every afternoon, with sometimes sweating after, and she had been steadily getting weaker during this period, but had suffered no pain. Her appearance was indicative of having suffered from loss of blood and very suggestive of malignant disease. At the same time her mental faculties seemed greatly blunted, in so much that it was difficult to elicit from her a very clear statement as to her previous history, and the greater portion had to be obtained from her husband.

The uterus was found enlarged, lying forward and not very movable, as there had been at a comparatively recent period an extensive pelvic peritonitis.

January 1, 1894, I operated, Dr. Milbank being present, Dr. Buckmaster administering the ether, and Dr. J. D. Emmet assisting me. The uterine canal had been packed two days before with iodoform gauze and this was first removed. With great difficulty the index finger was gradually advanced toward the fundus. The presence of a fibroid was easily detected at the fundus, in front and to the left side, and but partially projecting into the canal. With the finger in the canal and one hand over the abdomen it was estimated that the tumor was as large as the closed fist. By means of a stout tenaculum the mass was gradually dragged down, and out of its bed, through the slit which had been made with a pair of scissors into the uterine tissues covering it. The tumor was slowly separated from the uterine tissue by stripping it back in the opposite direction with the finger and scissors as the mass passed into the canal. When the tumor by this means

had been about half delivered from its bed, a portion of the mass was cut out in a cone shape from around the tenaculum with a pair of sharp-pointed scissors. It was then made evident that the center of the tumor had begun to break down, and the pus, although not more than a drachm or two, was very offensive. As the central portion was too soft to make traction upon it, the efforts for removal were limited to that part of the tumor nearest to the fundus, and the separation was made from above downward. In an hour I succeeded in removing, piece by piece, fully two thirds of the mass, and with apparently all of the central portion which had begun to break down. But her general condition had been most unpromising from the beginning, with every indication of a collapse at an early stage. At length I was obliged to desist after hastily washing out the canal with a weak solution of the bichloride of mercury and repacking it with strips of gauze, she remained in a critical state for fully twenty-four hours after the operation, and it was moreover exceedingly difficult to rouse her; the pulse became rapid and weak, with some rise of temperature, occasional sweating, and with every indication that she was still suffering from blood poisoning. On the following day I removed the gauze, washed out the uterine canal, and with great difficulty replaced the uterine tampon. After an interval of twenty-four hours longer it became most evident that to save her life it was necessary to remove without further delay from the uterus the cause of the blood poisoning.

Ether was carefully administered and at length I succeeded in getting away the remaining portion of the tumor, which it was found had also begun to slough. It was noted that the uterus had decreased in size fully one half from what its bulk was before the operation. A strong application was made to the fundus and over the site of the tumor with carbolic acid and glycerin, and the canal was repacked with gauze. The pieces of this fibroid after removal weighed together three quarters of a pound.

After twenty-four hours the gauze was taken away and the uterine canal for several days was thoroughly washed out from time to time. Fully a week passed after the last operation before the dullness of her mind cleared up. The convalescence was tedious, but in four weeks she was well enough to return home, at which time the uterus had regained its normal size and she had one natural period.

Just one year after the operation this woman walked into my office in perfect health to thank me and so changed was she that I did not know her. She was most grateful and stated that she had never been in such perfect health. While she was an inmate of my hospital I

had learned how careless she had always been in taking care of herself, and on this occasion I scolded her for being so lightly clad for the season and her answer was that she never took cold. Within a few hours after she was on her way to Washington and was exposed during a sudden change in the weather. Eighteen hours after, pneumonia developed and in three days from her visit to me she was dead.

I feel that it is not necessary to offer the histories of any additional cases to illustrate the subject. Great dexterity for removing these fibroids by traction and in section can only be acquired by practice. Not only does this experience afford the greater facility for working in so confined a space, but greater judgment is acquired in avoiding perforation of the uterine wall and in doing the least amount of injury to the tissues not immediately involved with the fibrous growth. But there are several points which should be fully appreciated and borne in mind beforehand, rather than that the knowledge of the necessity should have to be acquired by experience.

As the portion, or pedicle, which is divided in making the final separation must always be situated at the lowest part of the growth, namely, that nearest to the mouth of the uterus, it is necessary always to begin the traction as far off as possible at the upper portion.

The strong hook buried in the tumor should be twisted on itself so as to keep the point as much as possible toward the canal and away from the direction of the uterine wall. And for the same reason the points of the scissors also when in use should always be made to cut toward the center and upon the finger, which must be kept in the uterine canal, and thus the operator will be able to judge of the progress made.

As soon as the upper portion of the tumor is displaced, and the uterus responds by contracting, it is better as far as possible to continue the separation above, and by working from above downward, stripping the uterine tissue with the finger nail back from the tumor as it projects into the canal. It is better never to attempt to dig, as it were, the tumor out of its bed, unless there should be some special reason for doing so. Nor should any portion of the tumor be cut off until it begins to block the way, and only when the uterus is contracting. When a part is cut away a sufficient portion should always be left, projecting into the canal, with which to make traction for the purpose of displacing the remaining part of the tumor.

The traction exerted on the tumor is not to be made by dragging the uterus in the axis of the vagina down toward the outlet. But it is to be exercised by a twisting movement laterally in one direction

and another, and when made downward the uterus must be steadied by means of a counter pressure made by the finger in the uterine canal against some part of the tumor, or in its neighborhood, as the mass is being separated with the finger nail or scissors.

Whenever there is a marked difference in the density of the tissues it will be possible to separate the tumor rapidly from its bed and with this condition the uterus generally contracts promptly. Under these circumstances the operation is almost a bloodless one, but when the tumor has grown rapidly, and its structure and density is about the same as that of the uterine tissue, the bleeding is often excessive. It becomes then often an impossibility to separate such a growth with "clean delivery." In the effort to remove it a large portion of the mass will become frayed out or in shreds, a condition likely to end in blood poisoning, as these shreds not being properly nourished soon begin to slough. It is better to desist at an early stage and as soon as the condition can be recognized, then wash out the canal and pack with gauze. If in twelve hours, on removing the packing, it be evident that the uterus has made no progress in expelling the growth by contraction and if there should be any evidence that sloughing had begun, then, with our present experience, the proper practice is to remove the uterus without delay or the patient will ultimately die from blood poisoning. Yet I have known of several instances where the patient in time made a good recovery and under apparently the most unfavorable circumstances of exposure to blood poisoning, as the mass slowly sloughed away.

The means at our command for fully dilating the uterine canal are still defective and unsatisfactory. Nothing which has yet been employed for the purpose has proved so effective as the sponge tent, and our future advance will rest greatly upon some improved method for preparing these so that they may be used with safety. I have yielded to the feeling of prejudice generally held by the profession against the use of sponge tents, and have not had the courage to employ them for some years past. But at the same time I believe that if they were properly prepared and the patient was properly cared for at the time of their use, little danger would be incurred. This does not seem to be an unreasonable expectation, for if a sponge can be made innocuous to the peritonæum, certainly its use might be rendered safe in the uterine cavity. Our individual experience must necessarily carry a certain amount of weight in forming an opinion and the views I have expressed have been so influenced. During a number of years I used sponge tents fearlessly and they

were prepared specially by a nurse who had no idea of the necessity for any aseptic precaution beyond perfect cleanliness and the free use of turpentine-soap and water. I can scarcely recall an instance of any trouble after the use of tents prepared by this woman, certainly I never had any serious difficulty. It was then my practice to employ sponge tents several times a week, and often for months consecutively, in special cases when dilating the uterus for the descent of fibrous growths. Frequently I used then at that time with cases of subinvolution, before I had learned the close relation of this lesion to a laceration of the cervix. I then employed the tents, as I wished to excite by their use both pressure and drainage, leaving them infrequently for two days before removal, and would then irrigate the canal with a stream of hot water until it had contracted.

This nurse at length married and left my service ; I then purchased the tents I needed from Mary Smith, the old nurse who had served in the Woman's Hospital. It was supposed that she had learned the art from Margaret Bredden, the head nurse, who had been as careful and trustworthy in preparing these tents as the nurse in my private hospital. For a time Mary Smith did a good business, as her tents were beautifully made, but I, in common with every one who used them, soon began to have not only inflammatory trouble set up, but had every now and then an unaccountable death. It was at length found that this woman carried off all the sponges used in the laparotomies done at the Woman's Hospital, which had been intrusted to her to burn after each operation. As she supplied the instrument makers, as well as most of the gynæcologists in New York at that time, the consequences of her devilish work were soon widespread throughout the country.

After getting the sponges surgically clean, I believe the remaining difficulty would consist in being able to sterilize the saturated solution of gum arabic which is needed to stiffen the sponge and render it the easier of introduction. Possibly this can never be accomplished without destroying its peculiar properties and compressed sponge may have to be employed at times as a substitute for the gauze. While it is quite possible with the use of gauze to dilate sufficiently the uterine canal previous to an operation for removing some growth, it is not so effective as the sponge tent for dilating week after week for the gradual projection of the fibrous growth into the canal. Moreover, the sponge tent is of easy introduction comparatively, while placing the gauze is often painful and necessitates the frequent use of ether.

It is more necessary than for any other operation in gynæcology

to observe, with the minutest detail, every known aseptic precaution in preparing both the patient and the materials needed for an examination or operation within the uterine canal. As my remarks are addressed to experts it is not necessary for me to enter into detail as to how these measures are to be carried out. I would urge that in all cases of fibrous growths of the uterus the operation for removal of the uterus should be delayed for a reasonable time, unless there should be some urgent and special reason for doing otherwise. This delay is urged that dilatation might be honestly tried since my experience has clearly shown that it is not possible beforehand to form the slightest opinion as to what can be accomplished in any individual case from continued dilatation.

Where a large fibroid develops, with several smaller ones in the neighborhood, it frequently happens that the larger growth is crowded outward and becomes subperitoneal as a result of uterine contraction, the force of which is always lost, or broken up, in the direction of the uterine canal from the presence of the smaller growths. In several instances I have recognized this condition and after having removed by traction the smaller tumors, the larger one has eventually become pedunculated, as soon as the uterine contraction, with the aid of gravity, could act together in forcing it out in the direction of the least resistance.

Finally, as to the origin of these growths I am led to believe, as the result of my observation, that nearly all fibrous growths have their beginning, not only in muscular tissue but near to the uterine canal, where the functional activity is the greatest and where they would be better nourished. I, moreover, believe the natural tendency for such a growth is to advance toward and finally to project into the uterine canal.

I believe the time may come when it will be found that the origin of these growths, from the tissues surrounding the uterine canal, is always due to perverted nutrition. And they seem to have some close connection in their genesis with the changes following menstruation in anticipation of pregnancy. Hence their origin, as a result of perverted nutrition, would occur with those women in which the true function of the uterus had been sacrificed through want of the needed stimulus of pregnancy. This view would seem to be substantiated by the well-known fact that child-bearing women rarely suffer from these growths, and when they do exist with pregnancy they so frequently disappear before involution occurs, that their removal can not be attributed to an accidental cause.

CATGUT FOR LIGATION OF THE PEDICLE.*

BY ARCHIBALD McLAREN, M. D., ST. PAUL, MINN.

We must all admit that on account of its absorbable properties catgut is an ideal ligature and suture material. The difficulty, however, of rendering it sterile has led to a very limited use of this material by more careful surgeons. Most of us have in the past used catgut which we had sterilized according to different methods, trusting that at last the problem had been solved, but only to be again disappointed.

The best results have been procured probably by using catgut which was first soaked in ether to dissolve the fat, then boiled in alcohol and later soaked in a 1-500 bichloride solution in alcohol. But even when this method was used we had to agree with Hunter Robb when, in his late article on gynæcological technique, he says: "Catgut would be an almost ideal material for sutures, but unfortunately we have as yet no thoroughly reliable method of rendering it sterile."

With many others I had entirely given up the use of catgut for silk until eighteen months ago, when Dr. Edward Boeckman, of St. Paul, presented to the St. Paul Medical Society his combination steam and dry sterilizer and described his method for the dry sterilization of catgut, showing at the same time a long series of bouillon and agar-agar cultures of catgut both before and after sterilization.

By Dr. Boeckman's method the catgut is cut into desirable lengths, wrapped in waxed paper, then sealed in small envelopes, raised in the sterilizer to a temperature a little above 284° F. and kept at that temperature for four hours. All ordinary pus germs are killed at a lower degree of temperature, but the spore-bearing germs, particularly anthrax, so common in the intestine of the sheep, from which catgut is manufactured, are only killed by this high and protracted degree of heat. That catgut prepared in this way is sterile has been proved by innumerable culture tests as well as by the personal experience of all my friends who have used it. Among the minor points in favor of this method are its economy and the convenience with which it may be carried; a few of these small envelopes may be placed in the pocket-book, always ready for any surgical emergency.

* Read before the American Gynæcological Society, May 28, 1895.

Dr. C. A. Johnston, of Grand Rapids, Mich., describes in the April number of the *American Journal of Obstetrics* a method used by Krönig, of Leipsic, which is based upon what seems to me sound bacteriological principles. He boils his catgut in cumol, a coal-tar oil, the boiling point of which is 170° Centigrade. Theoretically, I should say that this method would render catgut sterile, and Dr. Johnston reports that the catgut so prepared is serviceable and followed by none of the ordinary bad results of silk. Even if this method produces catgut which is absolutely sterile, I should still prefer the gut prepared by dry sterilization, if for nothing else on account of the greater ease and convenience in carrying as well as the greater danger of infection of the catgut which is kept in any liquid preparation.

My experience with the various ligature bottles for carrying catgut and silk in liquids has been very unsatisfactory; they all leak and the ligatures become infected, even though they were originally sterile. Turning our attention now to pedicle ligatures, one objection to a non-absorbable material, such as silk, is that even though the silk may be perfectly sterile before it is put into the abdomen it is at times impossible to prevent its becoming infected, as, for instance, when removing a pus tube or a suppurating ovary, or occasionally when using it for an intestinal suture. As drainage is usually used in such cases, little harm results; the sinus is delayed in closing, however, until the last ligature loosens and comes away, and even then a chronic sinus may continue to discharge until it is opened and the granulation is removed. This happened to me recently, and it was found necessary to perform such an operation eighteen months after the removal of an appendix. A long sinus led down to the peritonæum, not through it, and still continued to discharge months after the last particle of silk had come away, a continuous silk suture having been used to bring the edges of the peritonæum together.

Dr. Polk, in his very excellent article on pelvic inflammations in Keating & Coe, advises against the ligation of the tubes even in radical removal of the appendages, because, as he says, "the ligature is so often infected through the stump of the tube that in place of being innocuous they become a source of irritation and inflammation, leading to many vexatious symptoms" even when "the ligature be applied at the cornu, as the writer has found to his cost." In the preceding paragraph Dr. Polk advises the use of either silk or catgut for the ligation of the ovarian vessels and the mesosalpinx. I will venture to say that Dr. Polk has probably had much more trouble of this nature when silk has been used than when catgut ligatures were em-

ployed. It seems more reasonable to believe that the source of infection was the suppurative disease for which the operation was performed rather than a later infection from the stump of the tube. I most heartily agree with Dr. Polk's principle of conservative surgery of the appendages, but I do not understand that this is in the line of that conservatism but is only applied to the removal of inflamed or purulent tubes. I can not see why the ligature should not be safer from infection from the stump of the tube when the stump is tightly constricted. The mucous lining of the tube is always surgically unclean, or is supposed to be, and should therefore be at once seared over with a Paquelin cautery, as is the custom, I believe, with almost all surgeons. Dr. Polk's theory in this regard, however, is not nearly so far-fetched as that of the Chicago surgeon, who ascribes the suppuration about the ligature and long-standing sinuses to the effects of the gonococcus in contra-distinction to other pus germs. This seems to me to be a serious relapse into the Noeggerathian darkness of bacteriological pathology. To illustrate the trouble which at times follows the use of silk I will report a few cases which may prove of interest :

CASE I.—Last winter Dr. Charles McBurney reported to me a case in which he had recently opened a pelvic abscess and evacuated a large quantity of pus and removed a silk pedicle ligature. This case had been operated upon several months before by another New York surgeon who had removed the appendages.

CASE II.—In June, 1893, Dr. C. A. Wheaton, of St. Paul, removed a suppurating ovary from Miss R., aged thirty years, at St. Luke's Hospital. On July 6, 1893, in Dr. Wheaton's absence I opened a large pelvic abscess, in this case through the vagina, removing the silk pedicle ligature at the same time, and introduced a rubber drainage-tube, after which she promptly recovered.* In regard to the cleanliness of the silk used in this last, as well as the succeeding, cases which I shall report, I will say that I have every reason to think that it was absolutely sterile. It was either first boiled for several hours, then immersed in a 1 to-500 bichloride solution, and again boiled for at least half an hour in the instrument-tray just preceding the operation ; or in the later cases it was prepared by the *Johns Hopkins* formula of sterilization in live steam for half an hour on three successive days and then preserved in sterilized alcohol.

CASE III.†—Mrs. W. T. L., St. Paul ; consultant, Dr. P. E. Jones, of Red Wing, Minn. Operated upon for pyosalpinx, combined with an

* Case No. 99, *Northwestern Lancet*, May 1, 1895.

† Case No. 114, *Ibid.*

ovary of the right side containing two pints of clear serous fluid, at St. Joseph's Hospital in St. Paul, on August 13, 1891. Mrs. L. recovered and left the hospital in a little over three weeks, but she was far from cured and was only able to be out of bed for a few days at a time. Examination several months after the operation showed a tender, fixed uterus with an inflammatory mass about the right uterine cornu about the size of a lemon and resembling a pyosalpinx. On November 7, 1893, over two years after the first operation, I again opened the abdomen and discovered an abscess cavity at the right uterine horn, containing one ounce of pus and the pedicle ligature floating loose in the pus. The abscess cavity was sponged out and drained with a strip of gauze; the sinus soon closed and in six weeks she was perfectly well for the first time in nearly three years.

CASE IV.*—On October 28, 1893, I operated upon Mrs. H. H. T. for Dr. Ogden, of St. Paul, and removed a multinodular fibroid uterus by supravaginal amputation, after Baer's method, enucleating from the left broad ligament a large subperitoneal fibroid; on account of the oozing from the large cavity in the left broad ligament I used a gauze drain. Three months after the operation, the patient having in the meantime suffered a great deal of pain, an abscess opened into the vagina, just at the left of the cervical stump, and discharged several ounces of pus and the silk ligatures used on that side. After this she promptly recovered.

CASE V.†—On September 14, 1893, I operated upon Mrs. C. H. S. for Dr. John Rogers, of St. Paul. Supravaginal amputation of a very large multinodular fibroid uterus. One year after this operation I saw her again with Dr. DeWitt. She gave at that time symptoms of intestinal obstruction. As the symptoms soon subsided, we were of the opinion that the trouble had been fæcal impaction. She lost flesh, however, complained of a great deal of pain and could not work. About six weeks ago I sent her to the City Hospital and on May 5th discovered a small abscess pointing into the vagina just at the left of the cervical stump. From this abscess I removed two silk ligatures; as her temperature did not abate, I later made an exploratory cœliotomy and discovered a second small abscess at the summit of the left broad ligament at the site of the ligature, which was applied to the ovarian vessels, just outside of the appendages. No silk was found in this abscess, however; it probably escaped observation in the pus, when the abscess was opened. Her temperature now dropped to normal,

* Case No. 108, *Northwestern Lancet*, May 1, 1895.† Case No. 140, *Ibid.*

and I trust that she will soon be entirely cured. In this last case, at the time of the original operation, no drainage was used, and the case did well for nearly a year. In both this and the preceding case the ligatures could not have been infected from the tube in the manner which Dr. Polk describes, because both appendages were removed with the uterus, the ovarian vessels being ligated just outside of the ovary and tube.

CASE VI.*—Mrs. Van D. For Dr. Sutherland of Morris, Minn., I removed a simple ovarian cyst, at St. Joseph's Hospital, on October 25, 1892. One year after the operation, so Dr. Sutherland informed me, this patient had an attack of pelvic inflammation; this was relieved by the discharge from the rectum of a quantity of pus, containing blood and silk ligatures. She promptly recovered and was entirely cured at the time of the last report.

CASE VII.†—Mrs. S. Operated upon for Dr. Camp, of Brainard, Minn., June 3, 1892. Vaginal hysterectomy for carcinoma uteri. During the next six months or more Mrs. S. was very much distressed by suppuration about the silk, which had been used to control the hæmorrhage from the broad ligaments at the time of the operation; she was eventually entirely relieved of this trouble by the discharge of all the silk ligatures.

The last case of this nature which I have to report followed the use of a catgut pedicle ligature, but it was not properly sterilized; this was the first case in which I used catgut and the sterilization was attempted in a sterilizer surrounded by a water jacket in which it was only possible to get a maximum temperature of 210° .

CASE VIII.—Mrs. J. M. D. Operated upon for Dr. Jeannette McLaren, of St. Paul, at St. Joseph's Hospital, May 18, 1894, in which I removed a small multilocular ovarian cyst. Two months later I opened a small abscess at the left uterine horn, when she promptly recovered and is now perfectly well.

The closure of peritoneal fistulæ is sometimes very slow, following the use of silk, as, for example, in the case of Mrs. C., from whom I removed a very large kidney for Dr. P. Ritchie, of St. Paul, on April 14, 1893. Her operation was done through the anterior incision; the kidney ruptured during enucleation, flooding the abdominal cavity with pus. Mrs. C. is now very well, having gained over thirty pounds in weight, but is mentally very much distressed over the continued discharge of a small fistula left in the track of the gauze drain; two silk ligatures have already come away.

* Case No. 89, *Northwestern Lancet*, May 1, 1895.

† Case No. 136, *Ibid.*

Again, Mrs. F., operated upon April 29, 1894, for Dr. A. Sweeney, of St. Paul, for double pyosalpinx. The operation was followed by irrigation and gauze drainage. Two silk ligatures have already come away, but the sinus still continues to discharge. That there should be no question as to the honesty of my statistics, I reported to the St. Paul Medical Society, six weeks ago, where the cases and the consultants are known, a list of my abdominal work during the past two years, in an article entitled *One Hundred and Twenty-five Consecutive Abdominal Operations*. Most of the cases which I have already cited are in that article, and I have given them the corresponding numbers of that table.

In the last sixty cases of that list I used catgut ligatures only and, in each case, a continuous catgut suture to bring together the peritoneal edges of the abdominal wound. I will submit for publication a list of seventy-three consecutive abdominal operations, in which catgut only has been used. My conclusions from my experience of the past year have been very satisfactory. There have been no deaths that could in any way be ascribed to catgut; mural abscesses, which, during the use of silk for pedicle ligatures and continuous suture of the peritonæum, were not uncommon, even in non-suppurative operations, have entirely disappeared in this class of cases. The suppurations which so often complicate drainage cases still occur with the use of catgut, but they are of much shorter duration, though I now use two buried sutures where I formerly used but one; fistulæ have closed much more quickly, and the ultimate comfort of the patients has been very much better. I certainly have seen very few cases in which vaginal hysterectomy for pelvic suppuration could have improved upon either the immediate or the secondary results. Looking at this list of cases, there are six deaths in seventy-three cases. One died on the tenth day from pneumonia—pelvis dry and clean. One died on the tenth day from the persistent vomiting of a chronic gastritis; no hæmorrhage; no peritonitis. One died three months after the removal of a suppurating ovary, from the effects of a vesico-abdominal fistula. Two died from shock—one in six and one in twenty-four hours. For operations done to relieve deep pelvic collections of pus, which could not be reached through the vagina, one died of septic peritonitis, from the rupture, during the removal of an extra-uterine gestation sac containing a necrotic foetus and placenta. In every fatal case the pelvis was carefully examined to make certain that hæmorrhage or sepsis about the ligature had not occurred, and in not one case was such a condition found.

Number of celiomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
140 May 18, 1894.	Mrs. J. M. D. Dr. J. McLaren. St. Joseph's Hos- pital.	25	1	.....	Multilocular ovarian cyst as large as Florida orange.	Ovariectomy. Pedicle ligated with catgut, 210° sterilized. Dr. J. McLaren. Curettement.	No.	Recovered. No. 147.
141 May 22, 1894.	Mrs. L. Dr. H. Bissell. St. Luke's Hos- pital.	37	6	2	Retroflexion. Laceration of cervix and perineum.	Coeliotomy. Ventro-fixation. Dr. Bissell performed trachelorrhaphy and perineorrhaphy.	No.	Recovered; 6, 25, '94, very much improved.
142 June 21, 1894.	Miss M. O. Dr. E. Strain, Minot, N. D. St. Luke's Hos- pital.	36	1	.....	Carcinoma of cervix. Ery- sipelas toxines injected by Dr. DeWitt for past month.	Vaginal hysterectomy. Heavy catgut ligature, 280° steriliza- tion.	No.	Recovered; no report.
143 June 22, 1894.	Mrs. S. Dr. J. McLaren. St. Luke's.	...	1	2	Retroflexion; adherent; endometritis.	Ovariectomy. Left tubo-ovarian cyst as large as a hen's egg. Right hydrosalpinx. Both removed.	No.	Recovered.
144 July 3, 1894.	Mrs. A. D. Dr. A. O. Beal. St. Luke's.	30	2	.....	Double hydrosalpinx. Both appendages very much dis- eased.	Coeliotomy. Both appendages very densely adherent. Both re- moved.	No.	Recovered; cured.
* 145 July 7, 1894.	Mrs. F. Dr. J. McLaren. St. Luke's Hos- pital.	.....	.....	.....	Multilocular ovarian cyst of right side. Left hydrosal- pinx.	Coeliotomy. Both appendages strongly adherent. Removed. Broad ligament badly torn.	Gauze.	Recovered; 3, 1, '95, sinus closed; cured.
146 July 10, 1894.	Mrs. E. L. F. Dr. J. McLaren. St. Luke's Hos- pital.	50	4	.....	Profound anemia. Con- stant flowing. Several cu- rettings.	Abdominal hysterectomy. Baer's method. Uterus small.	No.	Recovered; very much improved.

* Ligatures of catgut, sterilized by dry heat of 284° Fahr., used on all cases after No. 145.

Number of colotomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
147 July 18, 1894.	Mrs. J. M. D. See No. 140.	25	1	2	Large inflammatory mass about left stump. Rising temperature and pulse.	Cœliotomy. Small abscess about left horn of uterus. Opened and drained.	Gauze.	Recovered; cured.
148 July 21, 1894.	Mrs. B. Dr. T. H. John- son, St. Joseph's Hospital.	52	1	.....	Tubo-ovarian abscess. At least 8 oz. of pus. Left hy- drosalpinx.	Both appendages removed. Right abscess ruptured during enuclea- tion. Irrigation and drainage.	Gauze.	Recovered; 11, 15, '94. sinus closed; cured.
149 Aug. 23, 1894.	Half-breed In- dian, City Hos- pital patient.	26	.....	.....	Right pyosalpinx and sup- purating ovarian tumor. Left appendage adherent.	Both appendages removed. Irri- gation and drainage.	Glass.	Recovered; very much improved.
150 Aug. 28, 1894.	Mrs. F. W. Dr. Moloy, St. Cloud, St. Luke's Hospital.	32	.....	.....	Intestinal fistula. Follow- ing laparotomy 11, 20, '90, for double pyosalpinx, glass drainage.	Cœliotomy. Murphy button in small intestine. Suture of large intestine; silk. Facial abscess behind sigmoid; drained.	Gauze.	Recovered; fecal mat- ter discharged from fistula sixth day; but- ton passed from bowel on fourteenth day; un- improved.
151 Sept. 2, 1894.	Mrs. L. H. P. St. Luke's Hos- pital. Dr. F. J. Cressy.	30	1	1	False labor pains every night. Erotic dreams con- stantly. Nearly insane.	Both appendages removed. Right ovary twice as large as normal. Has recently been curetted.	No.	Recovered; no better until both pudic nerves were divided; now cured.
152 Sept. 8, 1894.	Mrs. T. F. M. Dr. Smalley, Hector, Minn. St. Luke's.	40	.....	.....	Ovarian cyst, filling lower abdomen. In bed for past ten days. Peritonitis.	Ovariectomy. Cyst. Very long pedicle, twisted three times. Ad- hesions all over cyst.	No.	Recovered.
153 Sept. 16, 1894.	Mrs. B. Dr. Cressy and Stratton, Granite Falls, St. Luke's Hospital.	55	4	.....	Ovarian tumor filling en- tire abdomen. Weight, 50 pounds.	Ovariectomy. Tumor almost solid. Incision 14 inches long. Dense adhesions.	No.	Recovered; tedious convalescence; dis- charged, cured, 11, 15, '94.

154 Sept. 17, 1894.	Mrs. W. B. H. Dr. Hunt, North- field. St. Joseph's Hospital.	33	.....	Ovarian cyst as large as child's head. Right pyo- salpinx.	Both appendages removed. Irriga- tion and drainage.	Glass.	Recovered; small mu- ral abscess at site of drain; cured.
155 Sept. 20, 1894.	Mrs. J. C., private patient, St. Luke's Hos- pital.	47	.....	Procidencia, third degree. Plastic operations at Dr. Bissell's hospital, 3, 8, '90.	Cœliotomy. Vento-fixation. Two buried silk-worm-gut sutures. Appendages both adherent. Sepa- rated.	No.	Recovered; 3, 20, '95, cured; no pain; good position.
156 Sept. 26, 1894.	Mrs. A. C. H. Dr. I. Wear, Fargo, St. Luke's.	30	3	Fibroid uterus as large as child's head; very painful.	Supravaginal amputation of uter- us. Calcareous fibroid.	No.	Recovered.
157 Oct. 1, 1894.	Miss S. Dr. C. E. Riggs, St. Luke's.	40	.....	Chronic ovaritis; several attacks of pelvic peritonitis; chronic gastritis.	Cœliotomy. Both appendages, which were practically normal, removed.	No.	Recovered; Feb. 1st died of chronic gastritis; autopsy, Dr. Brigham.
158 Oct. 13, 1894.	Mrs. E. J. H. Dr. H. Johnson, St. Paul's. St. Luke's Hospital.	51	1 2	Carcinoma of cervix and a little on post-vaginal wall; pain, tender, hæmorrhage.	Vaginal hysterectomy. Difficulty in enucleating disease in right side.	No.	Recovered; 12, 20, '94, mass in right broad ligament.
159 Oct. 20, 1894.	Mrs. N. M., Pine Bend. Dr. T. DeWitt, St. Joseph's Hos- pital.	30	1	Ovarian cyst. Right as large as adult head.	Both appendages removed. Right cyst contained clotted blood. Left ovary as large as a goose egg.	No.	Recovered; 12, 20, '94, does all her own work; cured.
160 Oct. 20, 1894.	Mrs. J. K. Dr. Smalley, Hec- tor. St. Luke's Hospital.	45	2	Multinodular fibroid uterus, flooding for several months.	Baer's amputation of the uterus.	No.	Recovered.

Number of coeliotomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
161 Oct. 27, 1894.	Mrs. L. H. Dr. J. H. Dorsey Glencoe. St. Luke's Hospital.	29	1	1, 3 years sick.	Left tubo-ovarian abscess closely adherent to both large intestines and blad- der.	Cœliotomy. Suppurating ovary removed. Five catgut sutures in large intestine. Bladder appar- ently sound. Irrigation.	Glass, 48 hrs. Gauze.	Died Jan. 31, 1895; bladder opened; urine discharged through; wound could not be closed; died of ex- haustion.
162 Nov. 3, 1894.	Mrs. J., private patient, St. Luke's.	30	.....	.....	Ventral hernia following laparotomies three and five years ago by Dr. C. A. W.	Cœliotomy. Omental hernia ad- herent. Two continuous catgut sutures, and interrupted silk- worm gut in skin.	No.	Recovered; 3, 20, pain no better.
163 Nov. 10, 1894.	Miss O. Dr. Beebe, St. Cloud. St. Luke's Hospital.	35	.....	.....	Chronic appendicitis. En- larged right ovary.	Cœliotomy. Appendix bound to under surface of cœcum. Re- moved. Right ovarian cyst re- moved.	No.	Recovered; improved.
164 Nov. 22, 1894.	Mrs. C. C. F. Consultant, C. E. Riggs, St. Paul. St. Luke's Hospital.	44	.....	.....	Uterine hemorrhage. Both ovaries removed 7, 5, '92.	Supravaginal amputation of uter- us.	No.	Recovered; 3, 20, '95. very much improved.
165 Nov. 24, 1894.	Miss C. Dr. Dunning, St. Paul. St. Luke's Hospital.	30	.....	.....	Double pyosalpinx follow- ing gangrenous cervical polypus.	Cœliotomy. Both appendages removed. Both tubes contained about one drachm of pus. Irrir- gation and drainage.	Glass, 48 hrs. Gauze.	Sinus closed twenty- fifth day. Recovered; 3, 20, '95, doing almost all her work.
166 Dec. 1, 1894.	Mrs. John L. McC. Dr. Aylen, Woods, N. D. St. Luke's Hospital.	40	.....	.....	Multinodular fibroid; uter- us as large as child's head.	Supravaginal amputation of uter- us. Both appendages enlarged, diseased, and adherent.	No.	Recovered.

167 Dec. 2, 1894.	Mr. Thos. K. Dr. R. Jackson, Farbault, St. Joseph's Hospital.	69	.....	Carcinoma of rectum, deep and diffuse. Patient not very strong.	Inguinal colotomy. Cancerous mass in pelvis much larger than was supposed.	No.	Recovered; 12, 17, '94, discharged from hospital; improved.
168 Dec. 5, 1894.	Mrs. John J. Dr. T. F. DeWitt, St. Paul, St. Luke's Hospital.	30	I	Ovarian cyst, complicating pregnancy at second month.	Ovariectomy. Left unilocular cyst. Right appendage removed. Pregnancy 2½ months.	No.	Recovered; 3, 20, '95, pregnancy not interfered with.
169 Dec. 8, 1894.	Mrs. A. B. City Hospital patient.	27	3	Left pyosalpinx. Two drachms of pus.	Coeliotomy. Left appendage removed; pus-stained; few active germs. Irrigation.	Gauze.	Recovered; sinus closed quickly.
170 Dec. 15, 1894.	Miss M. K. City Hospital patient.	22	I	Ovarian cyst; right as large as Florida orange.	Ovariectomy. Multilocular cyst of right ovary; very adherent. Left tube clubbed, containing bloody, purulent fluid.	No.	Recovered; severe bronchitis for one week.
171 Dec. 16, 1894.	Miss V. Dr. Daigneau, Austin.	24	.....	Recurrent appendicitis; several attacks; last two weeks ago.	Coeliotomy. Appendage closely bound down by strong adhesion. Chronic appendicitis. Stump covered.	No.	Recovered; 2, 17, '94, at work and feeling very well; cured.
172 Dec. 19, 1894.	Mrs. L. S. M. Consultant, Dr. DeWitt, St. Paul.	26	.....	Pyosalpinx, perhaps opening into bowel. Has had gonorrhoea.	Coeliotomy. Double pyosalpinx; leaking, septic peritonitis. Adherent appendix. Examination of pus; numerous micrococci.	Glass and gauze.	Sinus closed onemonth. Recovered; much improved.
173 Dec. 22, 1894.	Mrs. S. A. City Hospital patient.	32	.....	Double hydrosalpinx; coeliotomy July 1st. Opening and draining of pelvic abscess.	Coeliotomy. Right hydrosalpinx. Cystic ovary as large as a goose egg. Left hydrosalpinx. Few adhesions.	No.	Recovered, 2, 9, '95; no pelvic pain; does her own work, cured.
174 Jan. 1, 1895.	Mrs. A. W. C. Private patient, St. Luke's Hos.	45	3	Multinodular fibroid uterus. In bed for several months; pressure symptoms.	Baer's supravaginal amputation of uterus.	No.	Died Jan. 10, 1895. Constant vomiting of chronic gastritis; no peritonitis.

Number of coeliotomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
175 Jan. 5, 1895.	Mrs. B. S. City Hospital patient.	44	10	I	Complete procidentia. I ac- tion of C. and P. Small fibroid ; can not work.	Vaginal hysterectomy by morel- lation and dissection, anterior col- porrhaphy and Emmet's perineor- rhaphy.	No.	Died Jan. 15, 1895, pneumonia ; no peri- tonitis.
176 Jan. 8, 1895.	Miss J. H. City Hospital patient.	25	2	I	Tubercular salpingitis ; strong adhesions.	Both appendages removed. Irrir- gation and drainage.	Glass.	Recovered.
177 Jan. 8, 1895.	Mrs. B. O. B. City Hospital patient.	40	Sev- eral.	.....	Pyosalpinx puerperal. Last child three weeks old. Cu- retted eighteen days ago.	Cœliotomy. Intraperitoneal ab- scess connecting with pyosalpinx. Four ounces of thick pus. Irrir- gation and drainage.	Glass and gauze.	Sinus closed seventh week. Recovery pro- tracted and very tedir- ous ; cured.
178 Feb. 5, 1895.	Mrs. G. O. B. Dr. Dampier, Crookston.	45	Sev- eral.	.....	Ovarian cyst right ; left ovary also cystic.	Cœliotomy. Right cyst as large as adult head. Very dense ad- hesions.	No.	Recovered ; cured.
179 Feb. 16, 1895.	A. L. City Hospital patient.	24	I	.....	Left hydrosalpinx. Right appendage closely adherent.	Cœliotomy. Left tube contained 3 oz. of serum. Removed. Right appendage not removed.	No.	Recovered : 4, 5, very much improved.
180 Feb. 16, 1895.	Mrs. Jno. L., No. 92.	.....	.....	.....	Ovarian cyst, complicating pregnancy.	Ovariectomy. Two months preg- nant. Conceived when the ovary was as large as foetal head.	No.	Recovered. Pregnancy not interfered with.
181 Feb. 22, 1895.	Mrs. J. E. R. Dr. Dunning, St. Paul.	35	.....	.....	Double hydrosalpinx ; en- dometritis ; wishes to con- ceive.	Left ovary cystic and left hydro- salpinx removed. Right tube liberated. Opened, washed out, and not removed.	No.	Recovered.

Number of coeliotomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
190 Mar. 14, 1895.	Mrs. C. W. W., Little Falls, Dr. B. Walrath.	30	.....	.....	Ruptured, extrauterine ges- tation. Rupture seven weeks ago; in bed ever since.	Cœliotomy. Free peritoneal cav- ity not opened. Pus and broken- down blood clot; placental tissue.	Rub- ber tube.	Recovered.
191 Mar. 16, 1895.	Mrs. A. C., No. 184, City Hospital patient.	34	1	.....	Pelvic cellulitis. Great prostration.	Cœliotomy. Ovaries and tubes both normal. Cellular abscess opened through vagina.	No.	Recovered; cured.
192 Mar. 22, 1895.	Mrs. J. V. T., Austin, Dr. Daigman.	41	.....	.....	Chronic salpingitis. Tubes adherent. Endometritis.	Cœliotomy; adhesions broken up. Curettement and gauze packing.	No.	Recovered.
193 Mar. 23, 1895.	Miss L. A., City Hospital patient.	18	1	.....	Chronic salpingitis; dense adhesions.	Cœliotomy; both appendages lib- erated and removed.	No.	Recovered.
194 Mar. 30, 1895.	Miss B. McD., Dr. B. Walrath, St. Paul.	18	.....	.....	Tubercular salpingitis. Tu- bercular peritonitis and as- tes.	Cœliotomy; both appendages re- moved.	Glass.	Recovered.
195 Apr. 6, 1895.	Miss T. M. F., Dr. Henderson, St. Paul.	35	3	.....	Double suppurating der- moids. Very much pro- truded.	Cœliotomy. Double dermoids, size of Florida orange.	Glass and gauze.	Recovered. Fæcal fis- tula closed on 24th day.
196 Apr. 6, 1895.	Miss J. B., City Hospital patient.	25	.....	.....	Double hydrosalpinx. Has recently had gonorrhœa. Prostitute.	Cœliotomy. Both tubes and ova- ries removed. Each tube the size of a goose egg.	No.	Recovered.
197 Apr. 10, 1895.	Mrs. C. E. L., Dr. McLain, Hillsboro. No. 120.	.....	.....	.....	Intestinal adhesion to the back of uterus.	Cœliotomy; adhesions separated. One silk-worm-gut suture re- moved from the uterus. Uterus well attached by long pedicle to anterior abdominal wall.	No.	Recovered.

198 Apr. 11, 1895.	Mrs. S. Dr. Tollington, Clearwater.	26	1	.....	Suppurating ovarian right side. Multifollicular ovarian on left.	Coeliotomy. Both ovarian tumors removed. Abscess ruptured. Ir- rigation.	Glass and gauze.	Recovered. closed in three weeks. Cured.	Sinus
199 Apr. 12, 1895.	Mrs. Chas. H. Dr. A. J. Gillette, St. Paul.	30	2	.....	Tubercular peritonitis. Tu- bercular tubal abscesses. Large cheesy nodules in omentum.	Coeliotomy; separation of omen- tum. Abscess opened, filled with iodoform and drained.	Gauze.	Recovered. 5, 7, '95, sinus still discharging. Very much improved.	
200 Apr. 13, 1895.	Mrs. F. S. I. Dr. Chas. Green, St. Paul.	26	1	.....	Hæmatosalpinx. Lac. of cervix. Endometritis.	Coeliotomy; adhesions of right appendage separated. Left ap- pendage removed, curetted and packed.	No.	Recovered.	
201 Apr. 13, 1895.	Miss M. S. Dr. B. Walrath, St. Paul.	21	....	.....	Peritoneal cavity normal. Suspected tubercular in- flammation.	Coeliotomy. An artificial vesico- vaginal fistula made last Septem- ber.	No.	Recovered. May 1, opened a pyonephritic abscess.	
202 Apr. 16, 1895.	Mrs. C. F. W. Dr. Whitney, St. Paul.	26	....	.....	Tubo-ovarian abscess; right as large as Florida orange. Chronic sepsis.	Coeliotomy. Suppurating ovary and tube removed; very offensive pus. Nearly died on table from exhaustion.	Gauze.	Recovered.	
203 Apr. 18, 1895.	Mrs. L. R. W. Dr. Tollington, Clearwater.	34	2	.....	Extrauterine gestation. High temperature.	Fœtation sac rupture; necrotic fœtus and placenta.	Gauze and glass.	Died on third day; septic peritonitis; liga- ture in place; no hem- orrhage.	
204 May 3, 1895.	Miss F. B. City Hospital patient.	17	....	.....	Tubercular double tubercular salpin- gitis; necrotic omentum.	Coeliotomy. Omental tissue re- moved; both appendages, which were cheesy, removed.	Glass and gauze.	Recovered. Sinus still open, June 1, 1893. General tuberculosis.	
205 May 10, 1895.	Miss M. H. City Hospital patient.	43	....	3	Double hydrosalpinx; small fibroid uterus.	Coeliotomy; both cystic tubes re- moved.	No.	Recovered; improved.	
206 May 14, 1895.	Mrs. C. H. S., No. 108.	38	2	.....	Intraperitoneal abscess from silk; vaginal abscess opened last week.	Small abscess at summit of left broad ligament opened.	Yes.	Recovered; improved.	

Number of celiotomy and date.	Name.	Age.	Ch.	M.	Disease.	Operation.	Drain- age.	Results.
207 May 14, 1895.	Mrs. E. D. Dr. Hanley, St. Paul.	19	.....	.....	Double pyosalpinx; mar- ried three months; gonor- rhea.	Both suppurating appendages re- moved, ruptured.	Glass and gauze.	Recovered; cured.
208 May 18, 1895.	Mrs. I. K. Dr. H. Day, Eau Claire.	40	2	.....	Ovarian cyst.	Celiotomy; ovariectomy.	No.	Recovered.
209 May 18, 1895.	Miss K. W. Dr. H. Bissell, St. Paul.	17	.....	.....	Ovarian cyst, complicated with true perityphlitic ab- scess entirely in mesentery of the cæcum; no connec- tion with the bowel.	Celiotomy. Cyst removed; ab- scess ruptured into peritoneal cavity; considerable hæmorrhage.	Glass and gauze.	Died in six hours; acute sepsis and shock from hæmorrhage.
210 May 23, 1895.	Miss D. Dr. Dunning, St. Paul.	23	.....	.....	Tubercular double tubercular pyosal- pinx.	Celiotomy. Omentum loosened; ascitic fluid sponged out; both appendages removed.	Glass and gauze.	Recovered.
211 May 24, 1895.	Mrs. S. E. B., No. 185.	32	3	I	Inflamed cystic left ovary.	Celiotomy. Cyst as large as an orange removed; uterus firmly attached.	No.	Recovered.
212 May 24, 1895.	Miss F., prostitute. City Hospital patient.	21	.....	I	Right pyosalpinx; two weeks ago produced an abortion on herself.	Celiotomy. Right appendage removed; abscess ruptured dur- ing enucleation.	Glass and gauze.	Recovered.
213 May 25, 1895.	Mrs. S. G. W. Dr. Darrow, Fargo.	39	.....	.....	Multinodular fibroid uterus; profuse hæmorrhage; very anæmic.	Supra-vaginal hysterectomy.	No.	Recovered.

In addition to my own cases, Dr. Robert Wheaton, of St. Paul, who for several years acted as my assistant, reports to me that he has used catgut for pedicle ligature in fifteen cases, with one death, the death not due to catgut. Dr. John Rogers, who was also an assistant of mine, has operated upon ten cases without a death.

Dr. Edward Boeckman, to whom we are indebted for this catgut, tells me that he has used catgut upon at least twenty pedicles without a death. Dr. F. Dunsmore writes me that he has used this catgut in ten abdominal cases without a death. Dr. C. A. Wheaton tells me that he used this catgut for all abdominal work for the past eighteen months, with the greatest satisfaction, having no death which he could ascribe to the influence of catgut; that his results are very much better than with the use of silk.

THE PRESENT TREATMENT OF UTERINE DISPLACEMENTS.*

BY PAUL F. MUNDÉ, M. D.,

Professor of Gynæcology at the New York Polyclinic and at Dartmouth College; Gynæcologist to Mt. Sinai Hospital.

Unquestionably the greatest progress in gynæcological therapeutics during the last ten or fifteen years has been made in the domain of diseases of the uterine appendages and tumors of the uterus. The most brilliant achievements of modern surgery have been gained in either removing diseased appendages, ovarian tumors, or the uterus together with its fibrous neoplasms; and to emulate these successes of the leaders in this province of surgery is the great aim of the majority of our young gynæcologists. The proceedings of our medical societies and our medical journals teem with reports of successful or new operations of this kind, and naturally the interest of the whole profession is attracted more to this class of cases than to the comparatively commonplace ailments which I propose to discuss in this paper. And still I think I am justified in calling the attention of this Society, and through it of the profession generally, to the changes which have taken place during the last decade in the views held and the prac-

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tices followed by gynæcologists as to the significance and treatment of displacements of the uterus.

Although not of vital importance, like the majority of the diseases of the uterus and appendages referred to, displacements of the uterus are still so frequent and so often productive of evil influences upon the women afflicted with them that they form not only a very common variety of cases for which the physician is consulted, but also call for positive and effective treatment. In former years a very much greater importance was attached to these displacements of the uterus than is now the case. In the older books, even down to editions issued within the last four or five years, we find many pages devoted to the ætiology, pathology, symptoms, and treatment of uterine displacements, the majority of these symptoms being attributed entirely to the malposition of the organ, and the treatment being usually directed chiefly to its restoration and maintenance in the normal position. This statement applies not only to displacements backward and downward, but with equal force to those forward—that is, ante-flexion and anteversion—for the treatment and cure of which innumerable complicated contrivances have been devised. Thus in Dr. Thomas' well-known and at that time deservedly popular *Text-book on Diseases of Women*, fifth edition, 1880, we find given the following symptoms of ante-flexion: "Pain over epigastrium and in groins and back, irritable bladder, leucorrhœa, dysmenorrhœa, sterility, nervous disturbance and despondency, pain on locomotion, menorrhagia, tendency to abortion, pain on sexual intercourse, pelvic neuralgia, sense of depression at the epigastrium"; besides other more or less obscure reflex signs. Under anteversion we find a much smaller array of symptoms, the chief of which are dysmenorrhœa and sterility produced by the pressure of the os against the posterior vaginal wall, irritable bladder, rectal irritation and tenesmus, further, inability to walk. At that time we all, relying upon this great authority, blindly accepted his statements without using our own judgment as to whether or not all these symptoms were actually due to the displacement and distortion of the uterus. As a result of this supposed train of agonizing sufferings we find in the edition mentioned as well as in those preceding it descriptions and cuts of a large number of exceedingly complicated vaginal pessaries devised solely for the purpose of lifting up and straightening out the anteverted or ante-flexed uterus. Dr. Thomas himself has told me that he has spent many a sleepless night working out the problems of these mechanical contrivances, and where now are all these wonderful appliances? Cast aside, hid-

den away in drawers which are scarcely ever opened, or else consigned to the ash barrel. I use this strong language only to emphasize the change which has taken place in our views during the last fifteen years—yes, even during the last five years—on this subject of the significance and pathological importance of anterior displacements of the uterus. It is chiefly in regard to these anterior displacements that so great a change has taken place in our recent opinions and practice. Increasing experience has taught us that the symptoms of ante flexion, even of the major degrees, are practically *nil*; that an ante flexion of the third degree, for instance, manifests its presence in the virgin and nulliparous woman, if indeed it does so at all, by dysmenorrhœa, in the married woman by sterility, and even in the major degrees of ante flexion these results are very frequently absent. The minor degrees produce practically no symptoms whatever. In ante version such symptoms as present themselves are scarcely ever due to the ante version itself, which is by far a less frequent displacement than was formerly supposed. It is true that occasionally we meet with an ante version of such a degree, pure and uncomplicated, that the fundus rests directly upon the symphysis pubis and the cervix is tilted high up into the excavation of the sacrum. Then of course distressing pressure on the bladder and perhaps more or less irritation of the upper portion of the rectum are produced by the displacement; but I really do not believe that I have seen more than two or three such extreme cases of ante version in the last fifteen years.

Whenever there are any decided local symptoms caused by an ante version we may be sure that a downward displacement of the organ—that is, a prolapsus of the first degree—is associated with it, and this prolapsus is the element in the case to which the symptoms must be attributed. If we find a woman with ante version and prolapsus in the first degree unable to walk or remain long on her feet it must be our object to elevate the whole uterus, together with as much of the vaginal walls as may also be prolapsed, rather than to merely attempt to lift the fundus away from the bladder. Pessaries for ante flexion and ante version are therefore now but rarely used. I have hundreds of them, mostly of the types devised by Dr. Thomas, lying stowed away in drawers in my office which are never opened except when I wish to demonstrate to my students the instruments which formerly were used and which are now practically obsolete.

For ante flexion I may say that I never use nowadays an intravaginal supporter. None that I know of will elevate the ante flexed fundus

properly, none will straighten out a sharply flexed uterine canal, and, as I have already mentioned, their only possible indication would be for either dysmenorrhœa or sterility, in neither of which instances they would be effectual. We relieve the dysmenorrhœa, and perhaps also the sterility, by dilating and straightening the uterine canal, keeping it straight by intra-uterine stems (if we approve of them, which I do not say that I do, except on rare occasions), and we keep the canal wide by repeated packing with sterilized or iodoformized gauze. In this way we cure dysmenorrhœa usually, sterility frequently, and that is all that the anteversion calls for.

In anteversion with prolapsus we confine ourselves chiefly to relieving the prolapsus, and this I have found to be best done, so far as any vaginal support is concerned, by the pessary devised by Dr. Eugene C. Gehrung, of St. Louis, with which I have many years' experience and without which I would really not know what to do in cases of anteversion and prolapsus and cystocele. It is in my estimation the only vaginal instrument which will keep up a prolapsed anterior vaginal wall and bladder comfortably and without injury to the patient.

Now, of course, the question will be asked, How is it that so astute an observer as Dr. Thomas and with him so many others in recent times were so misled as to attribute all the symptoms mentioned to the anterior displacement? It may not be easy to answer this question in a manner exactly satisfactory to everybody. To me the reason seems perfectly plain, since many of the symptoms complained of were due not to the version or flexion, but to the concomitant catarrhal conditions of the uterus and tubes, to chronic enlargement of the uterus, so-called hyperplasia, induced by the catarrh, or by subinvolution, and to a certain amount of relaxation of the uterine supports and pelvic floor. To the relief and cure of these concomitant conditions should have been directed and probably were also unconsciously directed in those days the therapeutic efforts which benefited the patients. The pessaries played very little if any part in the improvement.

What I have said of anterior displacements does not, however, apply by any means in an equal degree to the posterior and downward displacements of the uterus. While a uterus may be retroverted or retroflexed to the first, second, and even third degree without producing any local or general symptoms whatever, this I hold to be rather the exception than the rule. A retroversion of the first degree, in which the body of the uterus occupies the same horizontal

plane as the vagina, or at least not more than an angle of 135° , produces actually no symptoms whatever, except that possibly it may be a cause of sterility, especially if the external os is unusually small. A retroversion of the second degree also probably gives no special discomfort; but a retroversion of the third degree in which the axis of the vagina and that of the uterus are at a right angle certainly does in the majority of instances exert pressure enough upon the lower portion of the rectum to interfere with free defecation and give rise to congestion of the rectum and hæmorrhoids. If in each of these degrees of displacement a flexion exists instead of a version the amount of discomfort to the patient will be proportionately increased. If the displacement occurs in a virgin or in a nulliparous married woman the uterus is small and at least for a time no local or general effect follows the displacement. In course of time the ovaries, however, very frequently follow the body of the uterus into the pelvic cavity and lie at the bottom of Douglas' pouch, where they may eventually become adherent and give rise to decided inconvenience. If the woman has borne children and the backward displacement is the result of parturition in consequence of relaxation of the pelvic supports and subinvolution of the uterus, I think it is the exception for such a displacement of a major degree to exist for a year or longer without giving rise to the usual symptoms of this condition, namely, bearing down, sensation of dropping and weight in the pelvis, sacralgia, inability to stand or walk any distance. Finally, I do not think that I am exaggerating when I say that it is the exception for any well-marked backward displacement of the uterus to exist without, after a lapse of time varying in different cases from several months to several years, a chronic enlargement of the organ coming on, together with chronic endometritis which materially increases the discomforts of the patient. In addition to the chronic congestion of the organ and the possible prolapse and adhesion of the appendages, the fundus uteri very frequently in old cases becomes adherent to the opposing surface of Douglas' pouch, and reposition of the organ then becomes impossible except by a more or less complicated and dangerous operation.

I should not have dilated so much upon these well-known symptoms of backward displacement of the uterus had I not wished to compare the significance of this displacement with that anteriorly first referred to, and I found it necessary to do this in order to explain why I consider retroversion and retroflexion to be pathological conditions usually requiring rectification.

As little as I use vaginal supports for anterior displacements, so indispensable have I found such mechanical means—of a different variety, of course—for backward displacements. I know pessaries to be a necessary evil, and nevertheless I find myself obliged to employ them daily. It is simply the question in my mind of choosing between two evils—either to allow the patient to go unrelieved, or else to elevate her uterus and keep it in position by a pessary. This, of course, does not cure her, but at least she is benefited so long as she wears the support. One might as well compel a patient with a lame leg to stay in bed or be confined to a chair for the want of a crutch or cane as to deprive a woman of the ability to walk and be comfortable simply because one does not approve of pessaries. Of course they must be properly fitted and adapted to each individual case, and I am perfectly aware that this is not always easy and requires some practice and perseverance. As I have already stated, pessaries do not cure displacements; at least, if they do, they do so only in a minority of cases. I see that Dr. Davenport, at the last meeting of this Society, agreed substantially with the views which I enunciated in a paper read before the International Medical Congress in London in 1881, on *The Curability of Uterine Displacements*, where I stated that I had cured by pessaries only 5.5 per cent (that is, seven out of one hundred and twenty-seven cases) of backward displacement. Davenport compiles the statistics of five observers (Mundé, Löhlein, Fränkel, Sänger, Davenport), in all five hundred and eighty-four cases, with fifty-two cures by pessaries, or a little over eleven per cent. I do not think that in the fourteen years which have elapsed since I wrote this article my results with pessaries as regards the permanent cure of backward displacements have been any better than I then stated, and still I continue to use pessaries for want of anything better.

Before leaving this subject of pessaries I wish to state that I have used for the last ten years or thereabout only one variety of pessary for anteversion and prolapsus—namely, the Gehrung—and for retro-displacements of the uterus the various modifications of the lever pessary of Hodge as devised by Albert Smith, Thomas, Noeggerath, and myself; these modifications consisting mainly in lengthening or broadening the instrument and increasing or diminishing its curves, and for cases of retroflexion adding a bulb to its post-cervical end. Further, I will state that I use only instruments made of hard rubber or some other hard unalterable substance. In place, therefore, of the numerous complicated pessaries which were formerly described the

number now thought necessary by me for the satisfactory treatment of uterine displacements is narrowed down to two chief varieties, and three or four modifications.

It still remains for me to discuss one form of displacement—namely, prolapsus. So far as any palliative treatment of this condition is concerned, I am not aware that anything new has been devised in recent years. Thure Brandt, it is true, has claimed to have cured some of the most inveterate cases of complete prolapsus of the uterus and vagina by his peculiar method of massage, and Schultze, Profanter, and a few others have reported similar successful results; but this method of pelveo-genital massage has not become popular in this country either with physicians or patients—a fact which, on reflection and on considering the highly sensitive character of the majority of our ladies, does not seem particularly surprising. So far as my experience goes, the number of mechanical supporters which formerly were recommended in the text-books and sold by instrument makers, retail and wholesale, has been very materially reduced, very much to the benefit of the patient's health and pocket. The majority of such cup-and-stem instruments—that being their usual character—but rarely kept the prolapsed uterus and vagina in place satisfactorily, and sooner or later caused ulceration. They never effected a cure; in fact, I do not know of any instrument which has ever cured a vaginal and uterine prolapsus except by producing so deep an ulceration and resulting cicatrix as to retain the prolapsed organs in the pelvis.

Astringent tampons, rest in bed, local faradization, and massage are all too troublesome, tedious, and uncertain methods to induce us to employ them very generally.

So far all that I have said only shows the progress in recent years in the more correct appreciation of the significance of uterine displacements and a curtailment of the palliative methods of treatment. If this were all the progress that has been made in this particular line it would still be worth accepting and recording. But a great deal more has been done.

Not satisfied with the imperfect results obtained by pessaries in retrodisplacements, and with the view of permanently curing such cases, various surgical methods have been introduced and very extensively practiced during the last ten or fifteen years.

1. The most prominent of these operations is that re-discovered by Dr. William Alexander, of Liverpool, and now known by his name. It consists in opening the inguinal canal on either side of the symphysis pubis, picking up the round ligaments of the uterus, drawing

them out as far as they will go in each individual case, cutting off the surplus, and stitching the remainder of the ligament into the canal. The fundus uteri is then approximated more or less to the anterior abdominal wall and lifted out of the pelvis, an anteversion being substituted for the retroversion or retroflexion for which the operation was performed. Absolute mobility of the uterus and appendages, with an entirely healthy condition of the latter, are the essential requisites for this operation. I have performed Alexander's operation now seventy-seven times—that is, on seventy-seven patients—and have, with but three or four exceptions, succeeded in finding the ligaments without any great trouble, drawing them out, and stitching them into the wound. I was, I believe, the first to perform this operation in this country, on the 12th of December, 1884. I have had the opportunity to see a large number of the cases again, and so far as my own personal observation goes I have not seen a single failure—that is to say, a single case in which the ligaments were properly brought out and attached where the uterus became again retroverted. Several of the patients have conceived, carried to term, and been confined, the uterus retaining its proper position. In some of these instances several pregnancies occurred, and I had the opportunity to satisfy myself that in two cases after the fifth pregnancy following the operation the uterus still remained anteverted. While I admit the difficulty of finding the ligaments in some cases, I must still contend, as I have persistently done whenever discussing this point, that an absolute failure to find the ligaments is always the fault of the operator. Any carelessness in following anatomical landmarks may result in such a failure. On the other hand, no one can foretell either the thickness of the ligaments or the possibility of drawing them out, since they are not infrequently very thin and adherent in the canal and may be broken during traction. This is the one drawback, in my opinion, to this operation and the only one. I have seen no bad results, no death follow it; nothing more, indeed, than now and then some suppuration. Hence I do not think that I can be blamed for speaking so highly of the operation, as I have done over and over again since I first learned how to perform it.

2. Owing to the difficulty, in the hands of certain operators, attending the finding of the ligaments by Alexander's method, and feeling that with our present surgical asepsis such a course was devoid of danger, a number of operators, notably Wylie, Palmer Dudley, and Mann, have opened the abdominal cavity, drawn up the fundus uteri, and shortened the round ligaments by doubling them upon themselves,

and stitching them thus doubled to the anterior wall of the uterus. I have done this operation but twice and have been fairly well satisfied with it. Still I do not think it is justifiable to open the peritoneal cavity for this purpose only, except when it is found necessary to detach the adherent uterus and appendages and in order to be able to elevate the fundus uteri. A healthy condition of the appendages in spite of their adhesion must be considered essential to this indication. I have lately had occasion to examine a case of this kind which was operated upon by Dudley, in which I found the uterus well anteverted but tilted much farther to the right than was normal. Apparently the right round ligament had been shortened more than the left. I can not quite agree with the latter gentleman, however—provided he really made the statement which the patient claims he did—that the operation was of so trifling a nature as hardly to be worth calling it an operation. I can never consider the opening of the peritoneal cavity to be an entirely trifling operation.

3. Ventral or anterior fixation, hysterorrhaphy or hysteropexy are the names given to the attachment of the fundus uteri to the anterior abdominal wall by means of sutures, the abdomen having been opened in the median line, the fundus uteri and appendages lifted out of the pelvis and brought up against the incision. This operation was first devised by Säger, Schröder, and Olshausen, later on modified by Howard Kelly, Leopold, and Klotz. I do not pretend to be correct in awarding the priority to any one of these gentlemen, since it is quite possible that several of them may have adopted the idea simultaneously. Although I have performed this operation twelve times, I have never been able to quite satisfy myself that it was justifiable to subject a woman to the risk of abdominal section for the cure of an entirely harmless affection such as retroversion or retroflexion. I lost but one of the twelve patients, it is true, and that from heart failure owing to enormous tympanites, the operation having been done for prolapsus; but this one death was quite sufficient to deter me from a further employment of the method. Of course, when the appendages were removed, the uterus being retroverted or prolapsed, I have always employed the practice of stitching the pedicles into the abdominal wound. These cases I do not include in the twelve of true ventral fixation. Only when the appendages are adherent and can still be preserved and the uterus is retroverted or prolapsed do I consider it justifiable to open the abdominal cavity and stitch the fundus to the abdominal wall. I do not think it logical to substitute an immovable anteverted uterus for a movable retroverted organ,

hence I do not think that ventral fixation can in any way be compared with or substituted for Alexander's operation or any method of shortening the round ligaments. Besides, we must consider that if pregnancy should supervene with the fundus attached to the anterior abdominal wall there may be an interference with the normal development of the uterus and premature delivery may take place. At least this did occur in one of my cases, where the woman after the fourth month complained of severe pains in the line of the cicatrix and finally during the fifth month labor came on. I know that there are quite a number of cases reported where pregnancy went to term in spite of the ventral fixation of the uterus; I do not, therefore, intend to deny that this may occur, but it is logical to fear premature delivery in such cases. Such a fear is not justified in shortening of the round ligaments by Alexander's or the internal methods, since during the growth of the uterus in pregnancy the ligaments adapt themselves to the increasing elevation of the organ. Many of our best operators in this country are, I think, gradually receding from their former preference for ventral fixation and returning to the ranks of the supporters of Alexander's operation or its modifications.

4. Following the practice very recently introduced by some Continental operators—Jacobs, of Brussels, and Péan, of Paris—of doing everything through the vagina that can possibly be done through that passage in preference to the abdominal wall, Polk chief of all has recently reported a number of cases in which he has opened the posterior vaginal and peritoneal pouch, detached the adherent uterus and the appendages with his fingers, drawn the appendages into the vagina for examination, and finding them sufficiently normal to warrant their retention, has elevated them and the uterus and retained them by shortening the round ligaments according to Alexander's method; he then closed the opening in the posterior *cul-de-sac* and vagina. I am not sure who else has done this operation and therefore do not mention names, but am under the impression that it has been done in New York by other gentlemen with decided success; and I must say that I think it exceedingly ingenious and practical and far preferable to the detachment of the uterus and appendages through the usual anterior abdominal incision. I especially commend the retention of the uterus and appendages in their normal position by the shortening of the round ligaments through the inguinal canal rather than by attaching the fundus to the anterior abdominal wall as is the practice in hysterorrhaphy. I shall certainly take the first opportunity to test the merits of this new procedure.

5. Schücking a number of years ago recommended anteflexing a retroflexed uterus by carrying a needle armed with a silk thread through the previously manually anteflexed uterine canal and fundus and between uterus and bladder into the vagina. The two ends of the silk were then tied and the uterus thus kept in this new position until the adhesion between the anterior peritoneal surface of the fundus uteri and the vesico-uterine pouch took place. He reported a number of successful cases, but the profession has never taken up this method, simply for the reason that it seemed not only risky but also mechanically illogical, in that an immovable anteflexion was substituted for a movable retroflexion—certainly not a very desirable substitution.

6. More recently Mackenrodt, of Berlin, has devised and enthusiastically recommended another method based on a similar mechanical principle, but differing in its execution, which consists in opening the anterior vaginal pouch, pushing up the bladder, bringing the fundus uteri down into the space thus made between bladder and uterus, and attaching it there by deep stitches passed through the vaginal walls. The same logical objection of a substitution of an immovable anteflexed uterus for a movable retroflexed one applies to this operation. While I have never performed it, any more than that of Schücking, I still feel myself justified in condemning it, if on theoretical grounds only, as anatomically bad and illogical. If I am criticised for condemning what I have not myself performed, I can only say that I might as well be condemned for opposing decapitation for a headache or amputation of the penis for a gonorrhœa. Both of these latter procedures I certainly have never performed and never shall perform for the conditions named, any more than I propose to do either Schücking's or Mackenrodt's operation for retroflexion.

7. There have been other plastic operations invented for the cure of retrodisplacements of the uterus which were based on the principle of stitching the cervix to the posterior vaginal wall with the object of thereby throwing the body of the uterus forward. The late Dr. James B. Hunter proposed such a method, but it was found impracticable thus to antevert the uterus and these methods were abandoned.

So far as our present status on these operative measures for the cure of backward displacements of the uterus goes I think that the opinions between the shortening of the round ligaments and ventral fixation remain about evenly divided. The new method of vaginal detachment of adherent uterus and appendages and Alexander's oper-

ation seems to me to be the coming one for those cases where the organs are adherent.

Now to come down finally to prolapsus uteri, which is almost invariably associated with a descent of one or both vaginal walls, together with more or less hypertrophy of the supravaginal portion of the cervix, the operations for these conditions are of much greater age than those for retrodisplacements. I will not go back to ancient history, but will merely refer to the plastic operations of Carl Braun in Vienna twenty-five years ago, and those of Simon, of Heidelberg, of about the same date—two surgeons who were the Nestors of plastic gynæcological surgery in Germany at that time. Since then the operations for prolapsus uteri et vaginæ have become so numerous that it may be said that almost every operator of prominence has a method of his own: Bischoff, Fritsch, Martin, Hegar, Freund, among the Germans; Lefort, Pozzi, Doléris, among the French; and Thomas, Emmet, Wylie, Polk, and myself, among the Americans. I really can not give the names of all those who have invented or claimed to have invented peculiar methods for the cure of prolapsus. Practically they all mean the same thing and are all based on similar principles—namely, reduction in size of the uterus, retention of the uterus in its normal position in the pelvis, and, finally, constriction of the vaginal walls and restoration of the perinæum—therefore either amputation of the cervix if it is elongated, or trachelorrhaphy if it is torn and hypertrophied, ventral fixation or Alexander's operation, constriction of the anterior vaginal wall by Stoltz's, Emmet's, or Sims' method, and of the posterior vaginal wall by Hegar's or Emmet's method, which latter implies also restoration of the perinæum—this is, in brief, the combination of operations which, more or less modified according to the ideas of different operators, is nowadays employed for the radical cure of prolapsus uteri et vaginæ. These plastic operations, while constricting the vagina, do not, however, propose to completely close that canal, and are therefore applicable to women who are still in the childbearing period and who are subject to their marital duties. Unfortunately these very conditions in many instances prevent a permanent cure, no matter how perfect the result of the plastic operations may have been when the stitches were removed, since coition and subsequent parturition are more than liable to bring about a return of the dilated vagina and the prolapse of its walls and of the uterus. It is therefore one of the rules to be inculcated upon such women as strenuously as possible that pregnancy should not again take place.

It has remained for one of the younger gynæcologists to devise within the last two years a most ingenious operation for the complete cure of prolapsus, which operation is, however, restricted to women who have passed the childbearing period or by whom at least the marital function is no longer to be performed. This operation consists in encircling the vaginal walls, beginning as near the cervix as possible, by stout silver-wire sutures which are inserted at the median line of the posterior vaginal wall and carried entirely around until they meet in front, a needle at each end of the wire being used. The suture is then twisted as tightly as it can be without tearing out, and the ends are turned down and cut short. The next suture is introduced about half an inch below the first, proceeding from within outward, and twisted in a similar manner. Stitch after stitch is thus inserted and twisted until the whole vaginal canal is narrowed down to the vulva, care being taken to so place the stitches that their ends will not irritate the neighboring parts. The last stitch practically closes the vulvar orifice, leaving only a small canal about the width of an ordinary lead pencil for the exit of secretions. It must be remembered that the sutures must be applied with the vagina and uterus replaced, not prolapsed, although the first two stitches may be introduced for convenience' sake around the external os with the uterus prolapsed; but before twisting the first stitch the uterus must be returned into the body. The patient is then put to bed and kept there for a few days until any possible chance of reaction has passed away, and then is allowed to get up. Her confinement to bed scarcely exceeds a week, and need not even reach that. The stitches are, of course, to remain, and that is the novel and ingenious part of the scheme. They remain as permanent splints. I have performed this operation three times within the last twelve months—twice at the Mount Sinai Hospital and once last summer in Hanover, N. H.—in all with perfect success. In the Hanover case I was obliged to use strong copper-plated iron wire, there being no sufficiently strong silver wire on hand. This made the introduction of the sutures very much more difficult and entailed some laceration of the tissues which otherwise would not have taken place. Still the patient was up within one week after the operation and went home at the end of the second week, claiming that she had not felt so comfortable for ten years, since which time she had the prolapsus. In two of the cases I found that after a time some of the lower stitches cut a little and required retwisting and shortening of the twisted ends. There was absolutely no reaction in any of the cases. I consider this to be the ideal operation for prolapsus, but

unfortunately, as I have stated, it is restricted to a comparatively limited number of cases. We shall therefore always be obliged to perform the combination of operations which I have described in women who are still in the childbearing period. The perfectly ideal operation for the cure of prolapsus uteri et vaginæ, which will enable the woman to bear children afterward, precisely as though she never had a prolapsus, has still to be invented.

Removal of the entire prolapsed uterus has been performed a number of times and may be perfectly justifiable if it seems to offer the only reasonable prospect for a cure. It will usually be necessary to remove also the larger part of the prolapsed vagina. I have not yet met with a case where I considered it imperative to perform this operation. Inversion of the uterus is not in the scope of this paper.

THE ALEXANDER OPERATION.*

BY CLEMENT CLEVELAND, M. D., NEW YORK.

It may reasonably be assumed that the operation of shortening the round ligaments for the cure of retrodisplacement of the uterus has established its position as a scientific procedure. I am well aware that it is not universally accepted that there are some among the most eminent gynæcologists who still regard it with doubt, or are opposed to it altogether. Profound belief in it as the most potent means for the cure of a most troublesome malady must be my excuse for venturing to present to this Society the results of my experience. I consider it one of the most beneficent operations ever devised.

I purposely say nothing in this paper upon the history of the operation. That has been sufficiently treated of. And I also omit, for the same reason, a description of the ligaments.

Arguments in Opposition to the Operation.—The literature upon this subject is now quite extensive. I have read many able articles by men whose experience and standing entitle them to respectful hearing and consideration, and they are, with hardly an exception, unqualifiedly and enthusiastically in favor of the operation.

In listening to discussions upon the subject, one is struck with the

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not remarkable fact that those who have arrayed themselves in opposition were those who, confessedly, had never done the operation, and based their reasoning entirely upon theoretical grounds, or were those whose experience had been confined to a very few cases, and whose results had not been good.

The Alexander operation is by no means an easy one for the beginner. If the matter could be thoroughly investigated, it would be found that the bad results had come from what may be called "first efforts." For myself I can say that I did not feel perfectly at home with the operation until I had done it quite a number of times—fifteen or more—and that now, with an experience quite large, I never begin an operation without some concern that I may not find the ligaments.

Those who are opposed to this operation have used arguments the most of which appear illogical and untenable. We hear it said that the operation is a dangerous one. It is necessary only to point to the large number of cases reported without a death, to refute such a statement. In very rare instances, making the percentage very small, death has occurred. There is no operation, no matter how trivial, that does not have some elements of danger about it. I class it in the same category as the operation upon the cervix, and consider it no more dangerous.

It is also said that there is too great difficulty in finding the ligaments, that they are sometimes absent, or so small and fragile that they easily break, or will not hold the uterus. It certainly requires great patience and care sometimes in discovering and drawing out these ligaments, but men who have gained sufficient experience to do the operation well never complain of this difficulty, nor do they assent to the claim that these ligaments are ever absent. Where there is a uterus there must be two round ligaments, and when they are not found in some portion of the inguinal canal, the fault lies with the operator. They may be very small, they may be torn away in some of their fibers from the various attachments, but there are always some of these fibers left, which can be found by careful searching. They may be delicate and fragile, but one who knows how to handle them rarely breaks one, and no matter how small they may be, in most cases they have strength enough to support the uterus to which they are attached.

It has been claimed that this operation causes abortion. I have never heard or read of a case where it was asserted that the restoring of the uterus to the normal position by shortening the round ligaments

had caused abortion. It is difficult to see how such an event could possibly be due to this operation. It has also been claimed, and surgeons are always questioned upon this point, that after labor the uterus will relapse into its former displaced position. Among my own cases are a number who have gone to full term, and have been examined repeatedly afterward, for the purpose of testing the validity of this claim. In no one instance has the uterus been found out of place. The same is found to be almost universally true in examining the statistics of other operators. I have cautioned my patients, who have had the Alexander operation, that it is unwise for them to become pregnant for at least a year from the time of operation. This, however, is merely for the sake of great caution. There are cases on record where pregnancy has taken place within a short period after the operation, and yet the uterus remained in the anterior position after labor. One of my cases found herself in this condition five months after the operation, and, remembering my instruction, had an abortion produced ; but this was not with my sanction. I should not venture to advise such interference, as there are instances where women have had children within the year after the operation, and still the uterus remained in place. It is wise in all cases within a few weeks after confinement, and especially in those who have had the round ligament shortened, to make a vaginal examination, to ascertain the position of the uterus, and, if it is retroplaced, to replace it, and support by a pessary. It has been my own habit for many years to examine all cases a few weeks after labor before allowing them to go about, to learn the condition of the cervix and position of the uterus. If the uterus was found retroplaced, a pessary was inserted, which they were to wear for at least a couple of months, when it could be tolerated. It is here, as a preventive measure, that the use of the pessary is most clearly indicated, as childbearing is a most fertile cause of retrodisplacement. It keeps a heavy uterus out of the pelvis, and takes the strain from the ligaments during the process of involution, and thereby helps them to regain their normal condition.

The claim is also made that invalidism is likely to follow this operation. On the contrary, the testimony of most operators is to the effect that it restores the invalid to a condition of sound health. Of course isolated cases will be met with where the operation has not improved the condition of the patient or has even made her worse. I believe it to be probable that if such cases were investigated, it would be found, nine times out of ten, that most of them were improperly selected, that the indications for the operation had not been clearly

defined. The frequency of hernia as a result is held up as a serious objection to the operation. In all my cases I have had but two where hernia followed, and they were among my earliest cases where the canal was slit up and buried sutures used, followed by suppuration. In not one case where the canal was not slit up has hernia appeared. It is said, too, that it is limited in its application. It certainly is, and should be.

Another assertion is that it is an unscientific procedure. By this must be meant either that it is unscientific to shorten a ligament that has been abnormally lengthened, or that when this is done the uterus is placed in an abnormal position. In the first place, what sound objection can there be to restoring a ligament to the length it originally had, and thereby restoring its function, unless by so doing you do a permanent injury to other structures? In the second place, with proper judgment and care, there is no danger in drawing the uterus too tight against the abdominal wall—no danger, in properly selected cases, of anteflexing the uterus. If the operation is properly done, the uterus is placed in an anatomically correct position, and this is true theoretically and physiologically also.

At the discussion on this subject, at last year's meeting, a distinguished member of the Society, for whom I entertain sentiments of great respect for his ability and learning, declared the Alexander operation to be "a passing fad of the day," and that it would soon become obsolete. The rapidly increasing number of surgeons who are doing the operation, and reporting their successes, with enthusiastic testimony to its benefits, is answer enough to such a position.

It is further claimed that there are other and preferable methods. By this, of course, is meant ventrofixation of the uterus, intraperitoneal shortening of the ligaments, and vaginal fixation, anterior and posterior. Formerly I was opposed to the Alexander operation, for what I deemed good and sufficient reasons, and contented myself with ventrofixation. This I have performed many times, and have been successful with it, and preferred it to all other methods. Since, however, I began to have such excellent results from shortening of the round ligaments, I have found it impossible to advocate an operation that must be classed under the heading of "capital"—that is, one in which there is a recognized danger to life. I know of no statistics in regard to the effect of pregnancy upon adhesions formed after ventrofixation. Theoretically, it would seem to be disastrous. It is known that the round ligaments grow in proportion with the pregnant uterus, and as they grow in size, their strength is proportionally in-

creased also, to support the increased weight of the uterus. 'This may possibly be true in regard to anterior adhesions, but it would hardly seem so.

In vaginal fixation I have no experience, and can, therefore, offer no criticisms, save the general one, that the operations under these headings have but few advocates.

In regard to intraperitoneal shortening of the ligaments, I should place it in the same category as ventrofixation, and be opposed to it partly for the same reasons. But more than that, I believe there is another argument against it, and it is this: In very many cases the ligaments are found torn away from the pubic spine, frayed out, and a solid portion of the ligament is not reached until it has been drawn out an inch or more. This fact—the slight hold of the ligament at the pubic spine and in the canal—militates against the probability that such ligaments would hold the uterus after mere intraperitoneal shortening. Mann's operation for intraperitoneal shortening, where the ligament is secured on the internal ring, is the only possible one where this objection does not hold good. I do not wish to be understood, however, as condemning any of these operations. I merely wish to show, if I can, why the Alexander should be preferred.

Modifications of the Operation.—It is not my purpose to discuss at any length the various modifications of this operation which necessitate opening the inguinal canal. They are all ingenious and do great credit to their originators, but I consider them entirely unnecessary, as the original Alexander operation appears to answer all the requirements, necessitates a shorter incision, is fraught with less danger to life, is less likely to be followed by hernia, and, moreover, because, in the hands of the expert, it can be as easily and as quickly performed, and the results are in every sense as satisfactory.

Indications for the Operation.—This operation is indicated in retro-displacement, with prolapse of one or both ovaries, where for any reason the patient can not or is unwilling to wear a pessary; also where there is a shallow Douglas' pouch, for in such cases it is impossible to introduce a pessary that will hold the uterus in the anterior position, and also in procidentia, where this operation is to be associated with plastic operations upon the vagina and perinæum. There is one case in my list where there was complete procidentia. Here curetting, amputation of the cervix, anterior colporrhaphy, perineorrhaphy, and lastly the Alexander was done. This was three years ago. All were successful. The patient had been bedridden. She is now perfectly well.

Causes of Failure.—These are manifold. Chiefly among them should be mentioned bad surgery in first efforts. Of course if a man is to do the operation he must make a beginning, and if he gain his experience entirely upon the living subject, he must expect some bad results. The best plan, as in most operations, is to perform it first upon the cadaver, and I know of no operation where such a course could be better followed. One of the chief causes for disappointment comes from its performance in improper cases, among which may be mentioned those where plastic adhesions exist to a more or less extent, and the uterus has not been easily reduced to a position of normal anteversion, and in those where there is disease of one or both ovaries, or of the uterus itself; in cases where one or both ligaments have not been found, though cases are reported where one liga-



FIG. I.

ment has been found to support the uterus fairly well; also where the ligaments have been broken during operation, and in cases where the ligaments have been too delicate to hold the uterus; in cases where too many sutures have been introduced, or where they were introduced so tightly that they cut partly through the ligaments. It is rare, however, that the ligaments are too frail. Most ligaments are capable of sustaining the uterus to which they are attached. I have in mind a delicate woman in whom I performed the operation, and found two very delicate ligaments.

I remarked at the time that the operation would probably be a failure. Contrary to my expectation, however, these ligaments held the uterus in perfect position, and the patient, who had been confined to her bed most of the time for the previous two years, was soon able to be up and about, and attend to her household duties. I have lately seen

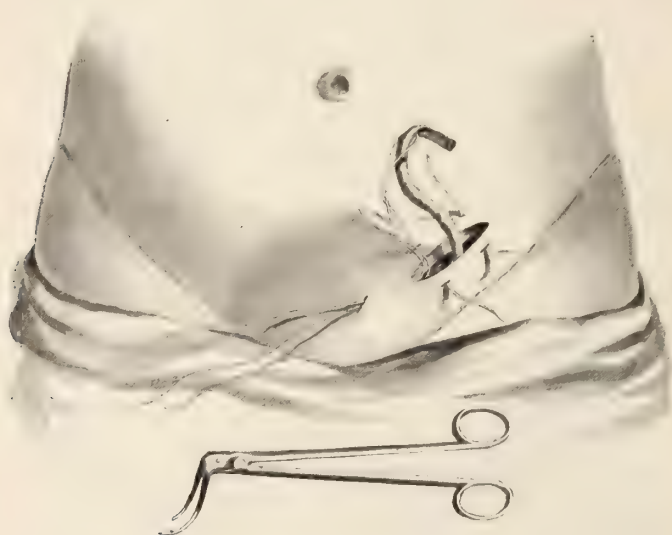


FIG. 2.

this patient, and found a uterus pregnant at three months, and in perfect position. In many of these cases herein reported the ligaments were found to be very small, yet their stability is manifest from the good results attained. There should, therefore, be no positive discouragement when the surgeon meets with small ligaments. Among the causes of failure should be placed insufficient drawing out of the ligaments, four inches being necessary in nearly every case. One cause of failure may be that an operator may not cut deeply enough but hunts for the ligament in the tissues external to the ring.

Suppuration in the wounds should be included among the causes of failure, though most have proved successful when that has occurred.

Technique of the Operation.—The patient is carefully prepared as for a laparotomy, and in the same manner. The vagina is thoroughly washed and rendered aseptic. The uterus is always curetted, as the first step. If the cervix is torn, this is repaired after the curetting,

and before the Alexander. A pessary is then fitted and introduced. If there is a tear of the cervix, and also of the perinæum, the cervix is repaired first, a pessary introduced, the ligaments then shortened, and the perinæum closed last. There is quite a long list among my cases in which these three operations were all done at one sitting. When it can be tolerated a pessary is always used, even in those cases where both the cervix and perinæum are closed, and this is worn from two months and a half to three months, and for the reason that it requires two months for the several tissues to regain their normal strength and stability. The pessary, of course, may be removed and cleansed when necessary, after a period of six weeks, which is a long enough time to secure a perfectly strong perinæum, and when the perinæum has been closed in connection with this operation it is well not to disturb the pessary for that length of time.

The Incision.—An incision three quarters of an inch to an inch or more long is made from the pubic spine in the direction of the inguinal canal, through integument and fat down to the fascia of the external oblique. It is rare that an incision longer than an inch is found necessary, even in the fattest subjects. With the tip of the

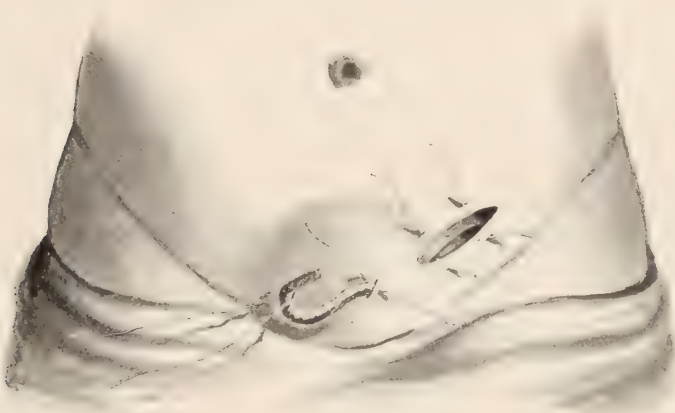


FIG. 3.

index finger, a point of less resistance just above the pubic spine is then sought for, and, in most instances, readily found. This is the so called "intercolumnar cellular membrane" covering the external ring. By separating the incision by the thumb and index finger, and pressing firmly on either side of the ring upon the pillars, this cellular

membrane will be seen to pouch, and, upon cutting through the proverbial bunch of fat, will protrude. This bunch of fat contains the ligament itself or fibers of it. By grasping it by forceps and by gentle traction the ligament can readily be isolated, and should be separated from the nerve that accompanies it. It can then, by persistent coaxing, be drawn out of the canal to what is considered the

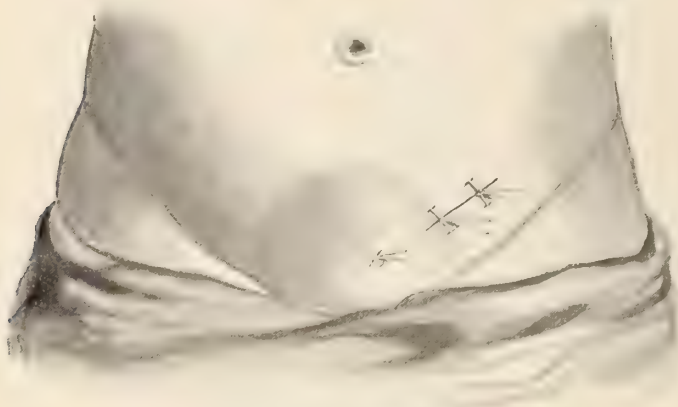


FIG. 4.

proper length, which in most cases, as I have said, is about four inches. The incision is then covered with gauze wet by bichloride solution (1 to 3,000), and the other ligament then sought for and drawn out in the same manner. Two sutures are then introduced to include all the tissues with the ligament—that is, through integument, fat, pillar of the ring and muscle, through the ligament, which is held quite taut by an assistant, then, in reverse order, through the same tissues on the other side of the ring. At this point I practice a modification of my own, which saves an inch or more of the ligament and, as it seems to me, secures a better prospect of success. A ligature carrier (Fig. 2) made sharp and delicate for the purpose is passed at the lower end of the incision, under the fascia and out on the mons, at a point an inch or more below the pubic spine. (Fig. 1.) The carrier is then opened slightly, in order to make the canal sufficiently large for the passage of the ligament, and to stretch the fascia slightly. A loop of silkworm gut, or other material, is then placed in the grasp of the carrier, and the instrument drawn back with this loop into the incision. (Fig. 1.)

A loop of the end of the ligament is then placed in the loop of silkworm gut, and the latter drawn back with the ligament through the small opening in the mons (Figs. 2 and 3). While an assistant holds the end of the ligament quite taut, the sutures in the incision are then tied, and, lastly, the suture is passed through the integument and ligament at the point of exit of the latter on the mons, then tied, and the excess of ligament cut away (Fig. 4.) The same process is repeated on the other side. If the operation has taken a good deal of time, or there has been rough handling of the tissues and ligament, a few strands of silkworm gut, as advised by Edebohls, are placed under the ligaments in the canal, as drainage, to be removed in twenty-four hours. A dressing of gauze wet with a solution of 1-to-3,000 bichloride is then placed over the wounds, with pads of sterilized gauze and cotton above it, and all secured by a double spica bandage, firmly applied. The patient is kept in bed for three weeks. Liquid food given for the first few days, and after that, if no unpleasant symptoms have appeared, as generous a diet as is allowable to a patient kept in bed. Bowels are moved every other day.

Recapitulation.—I make a very short incision, because I have found the work can be done quite as readily, and because a small scar is best for every reason. The patient herself would certainly prefer it should she have a choice in the matter, and there is, moreover, a decreased chance of infection.

In regard to suture material, I use silkworm gut by preference, which is always sterilized with the instruments just before the operation. It is less absorbent than silk, and makes an ideal suture. I have given up the use of buried sutures of any material, because I have had trouble with them, and because my mind is never free from anxiety in regard to a case where I have employed them. Moreover, my results have been satisfactory without them. I consider them irritating and a fruitful source of pus in wounds. I use but two sutures in the incision, because many sutures close together are apt to produce sloughing, and because two support the ligament sufficiently, and there is more space for drainage. I leave the sutures in place three weeks to give the ligaments a longer chance to become firmly adherent.

In cases of retroflexion the operator should see that the fundus is lifted out of the pelvis, either by a sound or by the pessary, from the fact that a uterus left in retroflexion is likely to be still further retroflexed by drawing upon the ligaments.

An interesting fact appears in the study of ligaments discovered

in operating—that those which are torn or frayed occur in those who have not borne children, and where the displacement can be traced to a fall or some severe physical shock, while those that are found in well-rounded shape in the inguinal canal occur chiefly in women whose displacements are due to childbearing.

Some cases with posterior adhesions after treatment may become operable, or the posterior incision may be made, adhesions broken up, as suggested by Polk, and then an Alexander done.

In one of my cases, in which death occurred from peritonitis, I opened the abdomen, broke up adhesions, and then did the Alexander. It was among my earliest cases. I should never open the abdomen again, but always enter by Douglas' pouch.

The dressings over the wounds are changed every four days, and a saturated solution of boric acid used instead of the bichloride, for the reason that bichloride frequently applied irritates the skin. With this care in the dressings, pus has rarely appeared in my cases. Every patient should be cautioned not to pass her hands underneath the bandage or dressings. This has been found to be a source of sepsis in the wounds. Patients will do this from curiosity or to relieve irritation of the skin.

I should mention that during the operation the wound is frequently bathed with a 1-to-3,000 solution of bichloride of mercury.

The most careful attention is paid to the bladder and bowels. The patients are all encouraged to pass their urine every six hours, plenty of cotton being placed so as to protect the dressings. Where urination is impossible a catheter is passed, the greatest care being taken to see that the meatus and vestibule are aseptic before its introduction. The bowels are moved every other day. It is necessary to be thus careful about the urination, because a distended bladder might prove disastrous to the holding of the ligaments, and without strict attention to antisepsis the bladder may easily be infected.

When I began to use the modification of the method above mentioned I used a curved Hagedorn needle with a carrying thread attached, for the purpose of carrying the ligament underneath the tissues of the mons, but I found that in drawing the ligament through, it was often caught and torn as it passed through the fascia. I therefore substituted the use of the ligature carrier in the way above described, in order to stretch the fascia sufficiently for the ready passage of the ligament.

I would repeat that a pessary is worn, in all cases, from two and a half to three months, and that after its removal the patient is in-

structed to report for examination once a month for a period of six months, where this is possible. After the Alexander the pessary can, in most cases, be tolerated. If at any time sagging of the uterus is discovered, the pessary is again reintroduced and worn for a longer period. It has been said above that two months is required for the tissues, after an operation, to regain their normal tensile strength, but it is possible that a longer time is required in some cases.

I would add that I never have had a ligament slough in the artificial canal made for it under the mons.

In regard to the modification here described, it is claimed for it merely that it seems to offer a better chance for the stability of the ligaments, inasmuch as it gives an inch or more of anchorage, and the end of the ligament is distributed in the same direction in which the termini of the normal ligament are lost in the tissues of the mons. I can not say, however, that in the last fifty or more cases in which I have used it I have had any better results than with the unmodified Alexander method. I merely offer it for what it is worth.

Two very sharp, small scalpels, made after the pattern shown in diagram (Fig. 2), with rounded, sharpened ends, I have found most useful. The rounded, sharpened point enables the operator to cut perpendicularly in a small incision through the intercolumnar cellular membrane. The knives I am careful to have made very sharp before each operation, as there is nothing so aggravating as a dull knife.

Appended is a tabulated list of eighty-three cases from my service in the Woman's Hospital, in New York, some of which were performed by my assistants, Drs. Kletzsch and Broun.

° 24	Patient.	Indication for operation.	Other operations.	Date of operation.	When last seen.	Anatomical result at last examination.	Therapeutic result when last seen.	Method of operation and remarks.
1	Mrs. E. T.	Retroversion.	.....	Apr., 1892.	Not since she left the hospital.	Uterus in position.	.....	Buried sutures, silk-worm gut.
2	Mrs. A. B.	"	.....	Do.	Do.	" "	.....	Do.
3	Miss C. McC.	Retroversion, left ovary down.	.....	May, 1892.	June 15, 1892.	Position perfect.	.....	Do.
4	Miss H. H.	Lacerated cervix, retroflexion.	Trachelorrhaphy.	June, 1892.	Not since she left the hospital.	Uterus backward one year afterward.	.....	Buried sutures, followed by suppuratation and hernia.
5	Mrs. B. A.	Lacerated cervix and perineum, retroversion.	Repair of cervix and perineum.	Do.	Apr. 26, 1895.	Uterus in excellent position.	Relieved of all symptoms.	Buried sutures.
6	Mrs. F. K.	Do.	Do.	Oct., 1892.	Dec. 1, 1892.	Partially backward, pessary.	.....	Right ligament anchored; left found but could not be withdrawn.
7	Miss L. K.	Retroversion.	.....	Do.	April, 1895.	Position excellent.	Relieved of all symptoms.	No buried sutures.
8	Mrs. K. I.	Retroversion, left ovary down.	.....	Do.	Not since she left the hospital.	" "	Relieved of symptoms.	

9	Mrs. I. N.	Lacerated cervix and retroversion.	Repair of cervix.	Nov., 1892.	Do.	Excellent.	Do.	
10	Miss T. K.	Retroversion, both ovaries down.	.....	Do.	April, 1895.	.....	.....	Since married, and when seen was 6 months pregnant.
11	Miss L. E.	Retroversion.	.....	Dec., 1892.	"	Result excellent.	Relieved of all symptoms.	Ligaments secured in wound; no buried sutures.
12	Mrs. E. M.	"	.....	Jan., 1893.	Not since she left the hospital.	Excellent.	Relieved.	Both wounds suppurated.
13	Mrs. D. H.	Lacerated cervix, retroversion.	Repair of cervix.	Feb., 1893.	April, 1893.	"	In perfect health.	Confined March 1, 1895, of living child; occiput post.; version.
14	Mrs. I. J.	Retroversion, left ovary down.	.....	Mar., 1893.	May 21, 1893.	.....	.....	Ligaments used as a living suture, after Abbé, with which external ring closed; much suppuration and exudation followed, which cleared up.
15	Mrs. K.	Retroversion.	.....	Do.	April, 1895.	Excellent.	Perfect health.	Was delivered in summer of 1894 of living child, normal labor.
16	Mrs. H.	"	.....	Do.	May, 1895.	"	"	"
17	Mrs. C. C. B.	"	.....	Do.	"	"	"	"
18	Mrs. H. C.	"	.....	Do.	April, 1895.	"	"	"

	Patient.	Indication for operation.	Other operations.	Date of operation.	When last seen.	Anatomical result at last examination.	Therapeutic result when last seen.	Method of operation and remarks.
19	Mrs. C. A.	Lacerated cervix and perinaeum, complete procidentia.	Repair of cervix and perinaeum.	Mar., 1893.	April, 1895 (letter).	Perfect.	Excellent health.	
20	Mrs. F. T.	Retroversion.	.....	May, 1893.	.....	Excellent.	Says she is perfectly well.	
21	Mrs. A. B.	"	.....	Do.	November, 1894.	Uterus in position; 2 months pregnant.	Relieved of symptoms.	Seen until 8 months pregnant, then lost sight of.
22	Mrs. L. B.	Lacerated cervix and perinaeum, retroversion.	Repair of cervix and perinaeum.	June, 1893.	December (about), 1894.	Excellent position.	Do.	Delivered of healthy child, Sept. 22, 1894; uterus in position when seen after-ward.
23	Mrs. G. T.	Retroversion.	.....	Do.	April, 1895 (letter)	.....	In excellent health, and relieved of all symptoms after operation.	
24	Mrs. A. N.	Lacerated cervix and perinaeum, retroversion.	Repair of cervix and perinaeum.	Do.	.....	In excellent position when discharged from hospital.		
25	Mrs. A. W.	Do.	Do.	Do.	Not seen since leaving hospital.	Uterus in position when discharged from hospital.		

26	Miss S. L.	Retroversion.	July, 1893.	November, 1893.	Uterus backward.	Symptoms relieved.
27	Mrs. L. A.	Lacerated cervix and perineum, retroversion.	Aug., 1893.	Not seen since leaving hospital.	Uterus in position when discharged from hospital.	
28	Mrs. M. R.	Do.	Oct., 1893.	Do.	Excellent on leaving hospital.	
29	Mrs. K.	Retroversion.	Do.	Do.	Do.	
30	Mrs. I.	"	Do.	Heard from indirectly, 1895.	Do.	Excellent health.
31	Mrs. K.	Lacerated cervix and perineum, retroversion.	Do.	.....	Uterus backward, as reported by Dr. Boldt in April, 1895.	
32	Mrs. K.	Retroversion.	Nov., 1893.	.....	Excellent on leaving hospital.	
33	Miss K. R.	"	Dec., 1893.	.....	Good on leaving hospital.	
34	Mrs. G.	"	Jan., 1894.	Apr. 26, 1895.	Position excellent.	Relieved of all symptoms.
35	Miss D.	"	Do.	.....	Excellent on leaving hospital.	

Case No.	Patient.	Indication for operation.	Other operations.	Date of operation.	When last seen.	Anatomical result at last examination.	Therapeutic result when last seen.	Method of operation and remarks.
36	Mrs. L.	Retroversion.	.....	Jan., 1894	.....	Excellent on leaving hospital.		
37	Mrs. F.	Lacerated cervix and perinæum, retroversion.	Cervix and perinæum repaired.	Do.	June 7, 1895.	Position excellent; relieved of symptom.	Symptoms relieved.	
38	Mrs. H.	Do.	Do.	Feb., 1894	.....	Good on leaving hospital.		
39	Mrs. C.	Do.	Do.	Do.	.....	Do.		
40	Mrs. F.	Do.	Do.	Do.	.....	Do.		
41	Mrs. J. H. D.	Retroversion.	.....	Mar., 1894	.....	Do.		
42	Mrs. A. F.	"	.....	Apr., 1894	.....	Do.		
43	Mrs. H. R.	"	.....	Do.	May, 1895.	Uterus in excellent position.	Symptoms relieved.	
44	Mrs. M. S.	"	.....	Do.	.....	Excellent on leaving hospital.		
45	Mrs. S. B.	Lacerated cervix and perinæum, retroversion.	Repair of cervix and perinæum.	Do.	April, 1895 (letter).	.....	Symptoms all relieved.	

46	Mrs. N. T. B.	Retroversion.	May, 1894.	Not seen since leaving hospital.	Excellent when last seen.	
47	Mrs. E. J.	Lacerated cervix and perineum, retroversion.	Do.	.....	Uterus backward.	
48	Mrs. M. B.	Lacerated cervix and retroversion.	Do.	April 25, 1895.	Uterus excellent position.	Pregnant.
49	Mrs. A. T.	Do.	June, 1894.	.....	Good when last seen.	
50	Mrs. A. S.	Retroversion.	July, 1894.	.....	"
51	Mrs. S.	Retroversion, lacerated cervix and perineum.	Do.	April, 1895.	Uterus in excellent position.	Some backache is still present, owing to need of a more extensive perineum.
52	Mrs. N.	Lacerated cervix and perineum, retroversion.	Do.	November (abt), 1894.	Position excellent.	Symptoms relieved.
53	Mrs. C. B.	Do.	Do.	.....	On leaving hospital, position excellent.	
54	Mrs. R. W.	Do.	Do.	.....	When last seen excellent.	

Case No.	Patient.	Indication for operation.	Other operations.	Date of operation.	When last seen.	Anatomical result at last examination.	Therapeutic result when last seen.	Method of operation and remarks.
55	Mrs. D.	Retroversion.	.....	Aug., 1894.	January, 1895.	Position excellent.	Symptoms relieved.	
56	Mrs. B.	Lacerated perineum and retroversion.	Repair of perineum.	Sept., 1894.	February, 1895.	"	"	
57	Mrs. T.	Lacerated cervix and perineum, retroversion.	Repair of cervix and perineum.	Do.	Do.	"	"	
58	Mrs. C.	Retroversion, adhesions.	Laparotomy and removal of diseased appendages.	Do.	Do.	"	In perfect health.	
59	Mrs. H. C.	Retroversion, dense adhesion, with diseased tubes.	Laparotomy, removal of appendages.	Do.	January, 1895.	Uterus in position.	No relief.	Uterus evidently seat of disease, and ought to have been relieved.
60	Mrs. S.	Retroversion.	.....	Oct., 1894.	April, 1895.	Excellent position.	Symptoms relieved.	
61	Mrs. S.	Do.	.....	Do.	"	"	"	

62 Mrs. K.	Lacerated cervix and perineum, retroversion.	Repair of cervix and perineum.	Do.	February, 1895.	"	"	
63 Mrs. E.	Do.	Do.	Do.	April, 1895.	"	"	
64 Miss H.	Procidentia.	Amputation, cervix.	Jan., 1895.	"	"	"	
65 Miss F.	Retroversion.	.....	Do.	.....	Excellent position on leaving hospital.	"	
66 Miss H.	Do.	.....	Do.	April, 1895.	Uterus excellent position.	"	
67 Mrs. S.	Do.	.....	Feb., 1895.	"	Excellent.	"	
68 Mrs. P.	Retroversion, lacerated cervix and perineum.	Cervix and perineum repaired.	Do.	.....	Still in hospital.	"	
69 Mrs. H.	Lacerated cervix and perineum, retroversion.	Do.	Mar., 1895.	May, 1895.	Excellent position.	Health splendid.	Detained on account of other operations.
70 Mrs. B. W.	Retroversion, adherent.	Laparotomy, Alexander.	Mar. 11, 1895.	.....	On leaving hospital, position excellent.	Relieved of symptoms.	

№	Patient.	Indication for operation.	Other operations.	Date of operation.	When last seen.	Anatomical result at last examination.	Therapeutic result when last seen.	Method of operation and remarks.
71	Mrs. C.	Lacerated cervix and perineum, retroversion.	Amputation, cervix, Alexander; perineorrhaphy.	Mar. 18, 1895.	.....	On leaving hospital, position excellent.	Relieved of symptoms.	
72	Mrs. C.	Lacerated perineum through sphincter, retroversion.	Perineorrhaphy, Alexander.	Mar. 25, 1895.	.....	Do.	Do.	
73	Mrs. P.	Lacerated cervix and perineum, retroversion.	Amputation, cervix, Alexander; perineorrhaphy.	Mar. 25, 1895.	.....	Do.	Do.	
74	Miss G.	Retroflexion.	Alexander.	Apr. 1, 1895.	.....	Do.	Do.	
75	Mrs. C.	Retroversion and cystocele.	Alexander, anterior colporrhaphy, perineorrhaphy.	Apr. 5, 1895.	.....	Do.	Do.	
76	Miss B. G.	Retroversion and ovarian cystocele.	Laparotomy, oöphorectomy, Alexander.	Do.	.....	Do.	Do.	

77	Mrs. R.	Lacerated cervix and perinæum, retroversion.	Amputation, cervix, Alexander; perineorrhaphy.	Apr. 8, 1895.	.....	Do.	Do.
78	Mrs. D.	Retroversion and lacerated cervix and perinæum.	Dilatation and curettage, amputation cervix, Alexander; perineorrhaphy.	Apr. 22, 1895.	.....	Do.	Do.
79	Miss B.	Retroversion and endometritis	Dilatation and curettage, Alexander.	Apr. 26, 1895.	.....	Do.	Do.
80	Mrs. B. McL.	Do.	Do.	Do.	.....	Do.	Do.
81	Miss S.	Do.	Do.	May 13, 1895	.....	Do.	Do.
82	Mrs. W.	Retroflexion, lacerated cervix and perinæum.	Dilatation and curettage, amputation cervix, Alexander; perineorrhaphy.	May 20, 1895.	.....	Do.	Do.
83	Mrs. Y.	Lacerated cervix, retroversion.	Dilatation and curettage, amputation cervix, Alexander.	May 25, 1895.	.....	Do.	Do.

RENAL INSUFFICIENCY IN GYNÆCOLOGICAL CASES.*

BY J. H. ETHERIDGE, M. D.

Any one writing to-day on gynæcology and failing to take up for consideration some operative procedure is extremely liable not to find many readers. To read all of the current gynæcological literature impresses one with the conviction that the surgery of pelvic diseases comprises about all that is good and worth knowing of the recent advance in this field of research. It is deplorable that appearances warrant such an inference, yet it is a fact that they bear no other interpretation. At no distant day there will be a reaction against this *furor operativus*, and then more attention will be paid to the legitimate sphere of remedies in gynæcology. The vast majority of physicians are incapable (from environment and lack of training) of performing surgical operations on women, and are compelled to limit their gynæcological exploits within the range of remedies. To such men the writer hopes these pages may commend themselves.

Every successful gynæcologist takes into consideration each and every organ and function of his patient before he lays out a plan of treatment. He knows superlatively well that each patient has disorders outside of the pelvis. He knows furthermore that it is the exception for a woman to present herself for his consideration who is sound in every other organ and has disorder only in her pelvis. Whenever a practitioner says his gynæcological patients never or rarely have any other derangement than pelvic disorder, we all understand that he rarely sees anything but the generative organs, and that, therefore, he has mental nystagmus; consequently he is an unsafe leader.

Many years ago, while the writer was attending to a large indoor dispensary practice, he was impressed by the numerous general symptoms given by gynæcological patients. He therefore began a system of case records which included every symptom given by one hundred consecutive patients. The result was interesting and extremely instructive. Those one hundred case records led to absorbingly interesting investigations into the various kinds of dyspepsias, headaches,

* Read before the American Gynæcological Society, May 29, 1895.

backaches, and neuralgias. During these investigations the interdependence of disorders and their symptoms was brought out so clearly and simply that the wonder is that its universal recognition does not obtain.

Attention is called in this paper to one set of organs—the kidneys—and to one fault only of those organs, and that is their *insufficient work* independently of their organic disease. In all that is said in this article no reference whatever is made to patients with organic kidney disease, a fact to be distinctly understood. Such patients are dealt with by the nephrologist. Women with sound kidneys only are referred to. Concerning them, this declaration is laid down: *Very many gynæcological patients suffer superlatively from renal insufficiency, and properly selected diuretics will relieve many of their symptoms commonly referred to the reflexes from pelvic diseases.*

Urine is composed of water and certain solids dissolved in it. The amount of the solids is proportionate to normal body weight. This proportion is fairly constant—enough so to constitute a safe working base.

If the solids are excreted in sufficient quantity, a normal condition exists. If they fall short of it, say twenty *per centum*, an insufficient quantity is excreted; a condition called “renal insufficiency.”

Retained excretions poison the system; if in large quantities, they produce death; if in smaller quantities, they produce the various manifestations of poisonous action on tissues for which they possess an elective affinity. We see this fact illustrated in uræmic convulsions and death in the last stages of pregnancy, and in the products of cutaneous excretion checked in cold-taking, producing a bronchitis, a diarrhœa, or a muscular rheumatism. It would be a most interesting study to ascertain what the effect, in doses ranging from the maximum to the minimum of the various human excretions introduced into the stomach, would be. We would unquestionably find produced very many of the symptoms for which we are daily, year after year, called upon to prescribe. Daily do we all see patients showing in varieties and shades of difference the effects on their systems of poison by sweat, fæces, urine, and bile. Indeed, a large share of a physician's life is spent in getting rid of these poisons and of what they have paved the way for developing.

Urinary solids are a lethal poison when given in sufficient quantity. Like all other poisons, their effect depends on their dose; if it be small the effect is inconsequential, if large the effect is much more serious, if very large the victim succumbs.

Any renal-insufficiency patient may be considered one who has absorbed urinary solids into his blood where they can produce their effect with precision.

Every human being can acquire renal insufficiency of varying duration. Unquestionably we all suffer from it at times, as is indicated by nervousness, or dyspepsia, or bronchitis, or neuralgia, or, in some women, by comparative amenorrhœa.

It is not yet settled incontestably what tissues are affected by urinary solids especially. Four years ago Bond (*Am. Jour. of the Med. Sciences*, September, 1891) attempted to show that serous membranes are liable to take on inflammations in renal-insufficiency patients. He would see in the patient who has recurrent attacks of pleurisy one who retains too much urea. It is a simple fact that many patients who eventually die of organic kidney disease, whose renal insufficiency of years' duration previously, unquestionably produced at length that organic kidney disease, were patients who had recurrent pleurisies. Similarly we meet with many patients who have repeated attacks of bronchitis, with profuse secretion, produced by renal insufficiency. Even their breath, in many cases, has a urinous odor, indicating that such patients are trying to excrete urinary solids through the pulmonary mucous surfaces. Such patients are always, and never otherwise, cured by the supervision of free urinary excretions, spontaneous or induced. Many persons can not take cold without suffering temporary renal insufficiency, which in turn causes a bronchitis or a diarrhœa. Who does not know the superb effect, in such cases, of Dover's powder, with its powerful diuretic action, or of sweet spirits of nitre, in small hourly doses?

On the nervous system we have unquestioned evidence of the deleterious effects of urinary solids in the production of the various neuralgias. Lithia and small doses of mercury quickly remove the hyperaccumulation and the neuralgia disappears. Mucous membranes respond very decidedly to the continuous or to even the intermittent dosage of renal solids. Proof of this is seen in the serous diarrhœa of uræmia, where the patient may be said to be attempting to urinate from the intestinal mucous surface. Gastro-duodenitis illustrates the same fact concerning too much uric acid remaining in the system. Unquestionably the same idea is seen carried out in contributing to the perpetuation of *chronic perimetritis* so often encountered, for it is a simple clinical fact that the administration of stimulating diuretics in cases presenting this condition constitutes one of the most powerful adjuvants to other treatments.

If the various ingredients of the urinary solids retained unduly in the system can produce so many serious symptoms, or, to put it perhaps more conservatively, if they seem to be associated with such serious symptoms, which disappear under the successful treatment of such retention, then they assuredly demand most respectful consideration. For it is a matter of daily observation that we see gynecological patients with renal insufficiency who present amenorrhœas, neuralgias, pelvic peritonitis, dyspepsias, bronchitis, cutaneous eruptions, headaches, backaches, leucorrhœas, nervousness, insomnias, etc.

To arrive at a more definite conclusion I have had an expert physiologist construct the following table, showing the amount in grains of normal excretion of urinary solids of human beings weighing from ninety to a hundred and eighty pounds. Since these figures refer to perfectly healthy human beings, it is safe to adopt a diminished amount of grains of excretion as a working basis. Accordingly, the two extremes of estimates of the urinary solids may be safely adopted as five hundred and eleven hundred grains :

Weight.	Urinary solids.	Weight.	Urinary solids.
40 lb.....	392 grains.	130 lb.....	1,028 grains.
50 "	479 "	140 "	1,078 "
60 "	563 "	150 "	1,150 "
70 "	639 "	160 "	1,198 "
80 "	716 "	170 "	1,237 "
90 "	789 "	180 "	1,260 "
100 "	854 "	190 "	1,300 "
110 "	916 "	200 "	1,330 "
120 "	974 "		

To estimate the urinary solids is an extremely simple matter. To be of value, we must understand, in a general way, how much of solids each patient should excrete. Women, according to height, weigh from ninety to one hundred and eighty pounds. Reference to abnormally lean or stout women is not included in these extremes. Many women do not weigh even ninety pounds, yet they are perfectly healthy. Then again there are very many women who weigh over two hundred and fifty or even three hundred pounds. Such extremes of body weight are disregarded. The amount of solids voided by healthy human beings, as stated before, may be assumed to vary from five hundred to eleven hundred grains daily, according to body weight. Thus the

woman weighing ninety pounds ought to pass five hundred grains and the woman weighing one hundred and eighty pounds ought to excrete eleven hundred grains of urinary solids. It is an easy matter to estimate the amount of solids that women of intermediate weights should void.

Various working formulas exist for estimating solids. It is understood that *all* solids of the urine are thus included. Innumerable articles have appeared in the past on the methods of estimating urea. The topic under consideration includes not only urea: it includes everything solid. The formula herein recommended is known as Haines' modification of Haeser's method.

Its simplicity and speedy solution relieve it of all the objections belonging to all formulas relating exclusively to estimating urea. It is this: *Multiply the last two figures of the specific gravity of the urine by the number of ounces voided in twenty-four hours and the product by $1\frac{1}{10}$.* Thus: If the amount of urine voided in twenty-four hours be 36 ounces and its specific gravity be 1021, the formula would read 36 times 21 times $1\frac{1}{10}$ equals 831, the number of grains of solids contained therein. These figures can be obtained at once upon measuring and taking the specific gravity, and the amount of solids calculated without a moment's delay. This estimate includes urea and all the other solids. Should we wish to estimate the amount of urea separately, that is quite another matter, requiring time and delicate chemical manipulation. This advantage exists in favor of estimating the amount of solids, that, if insufficiency exist, there is unquestionably a deficiency of urea existing also. In a large practice, where such calculations are made daily, sometimes several in one day, the item of time-saving is an important one.

Patients suffering from renal insufficiency should be regarded as poisoned patients and treated accordingly, for they are cases of veritable uræmic poisoning. They present symptoms varying in intensity according to dosage. Women passing only fifty per cent. of the normal amount of urinary solids are extremely numerous. It is simply astonishing to see how common renal insufficiency is in gynæcological cases. Women passing not to exceed four hundred grains of solids daily, present various degrees of nervous irritability. When the amount is lessened to, say, three hundred grains or less daily, the condition of nervousness becomes a very serious semeiological factor. Let a patient passing only the latter amount of urinary solids take a severe cold and she will develop a bronchitis, or a severe neuralgia, or a fresh attack of perimetritis, or a pleurisy, or some other malady

equally grave. When the solids are diminished still further, to, say, two hundred grains in twenty-four hours, we will find the nervous system so seriously invaded that our most solicitous attention is demanded. And with the amount still further diminished, say, to one hundred grains of solids *per diem*, our patients will be found dangerously near the verge of uræmic convulsions, the condition not infrequently found in the last weeks of gestation.

What are the evidences that certain tissues are invaded by urinary solids that they present symptoms that are to be associated with renal insufficiency? It is difficult perhaps to answer that question dogmatically. To give an unassailable reply involves a chemical analysis of the tissues presenting symptoms that may be alleged to arise from urine poisoning, that has not been made so far as our reading extends. I am not aware that the pelvic peritonæum, or a bronchial tissue, or a nerve that presents urgent symptoms in a case of renal insufficiency, has been examined by a chemist and declared to contain urinary solids. Therefore the *experimentum crucis* may be said to be wanting. Yet notwithstanding this deficiency, we will, till such chemical analyses have been made, be compelled, from a clinical standpoint, to associate very many urgent symptoms with the existence of renal insufficiency. Synthetically, however, we have a great amount of proof that the urinary solids *do* produce symptoms in certain tissues, and that proof is the therapeutic proof. For if appropriate diuretics are used in such cases it will be found that the excretion of urinary solids will be increased, thus indicating that they are called in from the tissues that do not contain them normally, and at the same time the urgent symptoms subside.

To illustrate :

CASE I.—Mrs. C., multipara, presenting, in addition to an urgent general metritis associated with deep, cervical, double lacerations, an obstinate and profusely secreting bronchitis. The cough produced such violent succussion of her pelvic organs that her metritic symptoms were intensified in the way of pain and greatly decreased ability to go about her daily duties. Vesical irritability and increased leucorrhœal discharges added to her general misery. Soon her digestive faculty was deranged, and a degree of anæmia supervened with its train of nervous symptoms. Cold weather brought on her bronchitis, from which she was comparatively free during the summer. Winter after winter she had been an invalid, submitting to gynæcological treatment fruitlessly. She had spent the winter season in southern France, in Italy, in Spain, in Cuba, only to find invalidism return upon

coming home. At length the modern treatment of dilating, curetting, and cervix operating came to us, and she passed successfully through that line of procedure with the result of a vast improvement in her general condition. Still the advent of winter developed her bronchitis, which was followed by bladder distress, leucorrhœa, and a gradual running down. Not till the second winter after the operations mentioned were the kidneys questioned. It was found that two hundred and ninety-eight grains only of urinary solids were passed, where she ought to have voided eight hundred and fifty grains. This discovery was made in 1890. She was at once put upon a stimulating diuretic, tonics, and a laxative. In thirty days her urinary solids were increased to nine hundred and fifty grains, the cough had entirely disappeared, and she was on the high road to recovery. After March 1st she had resumed her social obligations, every old symptom had disappeared, and she reached a degree of health that she had not known for years.

The only explanation of cure of this patient is to be found in the removal of the condition of renal insufficiency. The bronchial mucous membrane was apparently attempting to play the part of the kidney, and the irritating quality of the sputum perpetuated the cough. The vesical mucous membrane, irritated by the acrid character of the urine that was passed, as well as by the violence of the contractions of the abdominal muscles in coughing, caused the irritability of that viscus. The increased leucorrhœal discharge could be produced by the vicarious attempt of the endometrium to discharge urinary solids in its imperfect way aided by the continual engorgement of the uterus incident to the sudden and violent retardation of the venous blood flow that always accompanies the effort of coughing.

Almost numberless illustrations of cases of renal insufficiency in gynæcological cases can be cited. Not all gynæcological cases present it by any means. When it is detected it should receive our most careful consideration. No intimation is here given that it is the most important factor in diseases of women. To set up such a claim would be most absurd. The aim of this article is solely to call attention to one line of treatment that has been all but universally neglected heretofore, and to invite observations and original investigations.

There is the gravest reason for thinking that a very close relation, even that of cause and effect, exists between renal insufficiency and pelvic disorders. The developmental phase of the renal and generative organs constitutes that reason. Embryologically these two

sets of important organs arise from the same source. The mesoblast in the ovum gives rise to the muscles, bones, circulatory and lymphatic systems, the urinary and generative organs. From this fact it becomes an easy matter to infer that derangements in one set of these organs can produce, reflexly, if you please, or at least are very frequently associated with, derangements of the other.

Since observation shows the numerous cases of coexistence between renal insufficiency and neuralgias, mucous-membrane disorders and serous-membrane inflammations, one can not but question the possibility of this insufficiency producing or permitting amenorrhœas, dysmenorrhœas, leucorrhœas, and attacks of pelvic peritonitis. It is strongly emphasized that the position is *not* assumed that all cases of these disorders are produced by renal insufficiency, but, from the fact that many of them are relieved by including in the treatment remedies that increase the urinary solids, the conclusion can not be resisted that cause and effect actually exist between many of them and the deficiency of urinary ingredients.

INDICATIONS FOR TOTAL CASTRATION BY THE VAGINA.*

BY CHARLES JACOBS, M. D., BRUSSELS.

Before everything else, kindly allow me to express to you the sentiments of gratitude which I feel for the kind invitation you have sent me to assist at your meeting, as well as for the sympathetic and hearty manner in which you have welcomed me among you.

The circumstances which have brought me here, the honor of speaking among you, your kind greeting, everything in fact contributes to my never forgetting the date of this meeting.

I wish to put before you the principles I have so often supported in Europe, viz : the indications for hysterectomy by the vagina. I do not intend to retrace to you the history of the above operation, to point out the numerous processes, to recall to your memory the opinions for or against, nor the struggles fought out. That would be going over facts, which will remain graven in the history of modern surgery. My programme is more modest.

* Read before the American Gynæcological Society, May 29, 1895.

I wish to submit to your judgment, so as to try and gain your convictions, the results of my own personal practice: what I have done, how and why I have done so, the good and bad results I have obtained. I wish to do that without passion or personal attack. And if I bring a few among you to be convinced, I shall consider myself happy, for I shall have accomplished a useful and beneficent task.

From 1889 up to the 1st of April, 1895, I have practiced 403 operations of this kind. I have obtained 391 operative cures with 12 deaths, which carries the death-rate to 2.9 per cent.

Details of the Aforementioned Operations.

INDICATIONS.	Cases.	Cured.	Deaths.
<i>A. Uterine cancer.</i>			
Epithelioma colli	35	34	1
Epithelioma corporis	3	3	
Sarcoma	2	2	
Adenoma malignum	5	5	
<i>B. Uterine fibroid.</i>			
Simple vaginal hysterectomy	23	23	
Hysterectomy by morcellation	15	13	2
<i>C. Extra-uterine pregnancy</i>	3	3	
<i>D. Total genital prolapse</i>	19	18	1
<i>E. Bilateral diseases of appendages.</i>			
Purulent—Pyosalpinx	142	139	3
Abscess of the ovaries	15	15	
Hæmatosalpinx	33	33	
Chronic parenchymatous salpingo-oöphoritis, without adjacent or uterine complications	82	79	3
<i>F. Chronic and incurable diseases of uterus or appendages.</i>			
Tuberculosis	6	5	1
Pelvic neuralgias	6	5	1
<i>G. Secondary hysterectomy after abdominal operation</i>	14	14	
	403	391	12

As a general rule, it may now be said that vaginal hysterectomy finds its indications in—

1. *Uterine cancer.*
2. *Fibroids of the uterus.*
3. *Extra-uterine pregnancy.*
4. *Total genital prolapse.*
5. *The inflammatory diseases of the appendages.*
6. *The chronic and incurable diseases of the appendages and of the uterus.*
7. *The diseases of the uterus after abdominal operation.*

The great extent of the subject prevents me from entering into full particulars. I also wish to avoid in the discussion all arguments of which the non-value is at present known: the abdominal cicatrix of the cœliotomy, the dangers subsequent to abdominal operations, resulting from the leaving in the pelvis a diseased uterus, etc. I shall also pass over in silence the medical treatments and other operations, directed against the same diseases: such as vaginal functions, vaginal incisions, vaginal laparotomy, etc.

Let us go quickly through the operative indications in the different cases.

A. *Uterine Cancer.*—Vaginal hysterectomy has very clear indications. To practice the operation with success, we must find—

1. Integrity of the vaginal *cul-de-sac*.
2. Complete mobility of the uterus.
3. A satisfactory general state of health.

But the invasion of the vagina, the intense pain which indicates the encroaching upon the broad ligaments, peri-uterine adhesions absolutely contra-indicate it.

Can we conscientiously advise uterine extirpation in cancer? Is not that a useless operation?

In the present state of science, I consider that the extirpation should always be attempted under the above-mentioned conditions. If it is true that recidivation is almost unavoidable, at least we may procure for our patients the chance of survival for a time, greater or less, which other operations do not afford.

Out of 45 cases, upon which I have operated, I have had 1 death; being 2.3 per cent. I have lost sight of 9 patients and have kept sight of 33.

Recidivation....	{	Before 1 year	4
		After 1 "	3
		After 2 years	5
		After 3 "	13
		After 4 "	4
		After 5 "	1

I have actually at present 5 patients free from recidivation, who have been operated upon more than four years ago.

As will be seen, the most numerous cases of recidivation have occurred only after three years. It seems therefore that it is in the patients' interest for them to undergo an operation of which the dangers are slight and which can give them comparatively good health, for a period much longer than that afforded by any other operation or palliative treatment.

The extent of the subject I wish to discuss before you forcibly obliges me to be brief; I shall therefore pass straight on to:

B. *Uterine Fibroids*.—I consider, according to my experience, that it is exceptional for a uterine fibroid to disappear after the menopause. We often see, after the critical age, these tumors show their presence by manifold symptoms: metrorrhagia increases in volume, or different forms of degeneration occur. The artificial menopause brought about by bilateral castration, only being able to give, according to actual facts admitted, uncertain results, and on the other hand the medical palliative treatments almost always giving but bad results, our duty is to advise the ablation of the fibrous tumors. The operation being less dangerous according to the smallness of the tumor, I always advise the operation as soon as possible, preferably the vaginal hysterectomy, before the tumors have acquired sufficient size to oblige us to interfere by way of the abdomen.

I shall not speak to you of the abdominal operations which apply to large fibrous tumors.

I have practiced 38 operations of the kind: 23 simple hysterectomies with 23 cures; 15 hysterectomies by morcellation with 13 cures; 2 deaths.

These 2 deaths have arisen from exhaustion of the patients and cardiac disease.

In 5 cases there existed at the same time as the fibrous tumor purulent or bloody tubal collections.

C. *Extra-uterine Pregnancy*.—When all the subjective and objective symptoms permit us to lay down the diagnosis of extra-uterine pregnancy or of abortive tubal pregnancy, our duty is to surgically interfere. The great number of cases observed up to the present tend to prove that in the case of extra-uterine pregnancy the appendages are always diseased on both sides; their ablation is therefore absolutely necessary. I consider that in such cases total castration by the vagina fulfills all indications.

This intervention should be made as soon as possible, because of

the numerous lesions of the uterus and appendages, as well as the peri-uterine diseases, which are unavoidably occasioned by extra-uterine pregnancy.

I have operated upon 3 cases of the sort with 3 positive cures.

In the 3 cases the extra-uterine pregnancy was accompanied by intra-abdominal hæmatocele.

D. Total Genital Prolapse.—The different ways of treating total genital prolapse give results so little encouraging that in certain cases one may advise the extirpation of the uterus. Such cases are scarce. We will only apply it to aged women whose uteri have become useless organs, but which by reason of that infirmity have become the seat of constant pain. I do not advise hysterectomy when the uterus is small, for in such case vaginal plastic operations give very good results.

The uterus with thick walls, with swollen cervix surrounded by relaxed tissues, renders doubtful the success of plastic work; sterility, failure of prior operations, such are the conditions which require radical extirpation.

There almost always exists after the cure a degree more or less of vaginal prolapse; for that reason I am in the habit of completing the treatment by plastic operations on the vagina and perinæum a few weeks after. I have operated upon 19 cases of this kind, of which 18 cures and 1 death, due to subsequent intestinal paralysis, resulted.

In 12 of these cases I have practiced four or five weeks after the hysterectomy vaginal plastic operations. Excepting in 3 cases, where there still persists a certain degree of anterior vaginal prolapse, I have observed complete cure.

E. Inflammatory Diseases of the Appendages.—Two hundred and seventy-two cases of diseased appendages, with 6 deaths—such is my experience; 142 cases of pyosalpinx; 15 cases of abscess of the ovary; 33 cases of hæmatosalpinx; 82 cases of chronic ovaro-salpingitis.

The deaths have occurred thus: Three times in cases of pyosalpinx, 3 times in chronic ovaro-salpingitis.

The first 3 cases with exhausted patients; the 3 others with women near their critical age or having gone through such, and whose deaths I attribute to the nervous shock arising from the operation. I have therefore observed 266 cures. I have been able to see again about three fourths of these patients many months after their operations. I have shown them to my students, to my colleagues. I have had undeniably proved their definite and radical cures to have remained absolutely the same as after the operations. To all, or mostly all, health has entirely returned, and I can assert that not one of the

aforesaid patients has been obliged to again have recourse to me since the operation.

There is one danger in hysterectomy of which I will immediately speak to you—that is, subsequent fistulæ.

They may be classed as follows :

1. Peritoneal fistulæ.
2. Vesical fistulæ.
3. Ureteral fistulæ.
4. Intestinal fistulæ.

In the 403 cases of hysterectomy I have observed 9 fistulæ after the operation, which gives me the conviction that however complicated may be the operation subsequent fistula is an excessively rare thing.

I have observed :

Five intestinal fistulæ.

Three vesical fistulæ.

One ureteral fistula.

Intestinal Fistulæ.—In most of the cases these fistulæ existed prior to the operation, that is to say, they were fistulous passages which communicate the pelvic purulent pockets to some part of the intestine. These passages were so large, and with coats so well organized, that the disappearance of the purulent pockets did not suffice to bring about the subsequent and spontaneous cure.

The first case I observed was of this kind. It was in a person attacked by a long-standing pelvic suppuration, communicating with the intestine. The fistulous passages, for there were several of them, gave, after the hysterectomy, issue to fæcal matters, by way of the vagina. I tried to cure this infirmity by the vaginal plastic operations, but in vain. About a year after the operation the patient died from intestinal tuberculosis.

In the second case, an intestinal fistula took place during the operation by the rupture of the adhesions. I observed a spontaneous cure after a few days.

The third intestinal fistula took place a year after hysterectomy by morcellation in uterine fibroid. A pad of wadding had been left in Douglas's pouch up to that time; after having caused a small local abscess, it issued by the vaginal wound. There persisted in this place a small intestinal fistula, which I succeeded in curing by means of a plastic operation.

The fourth case of intestino-vaginal fistula caused me to make use of the Murphy button. It was a very serious pelvic suppuration, with intestinal communication.

The adhesions of the appendages were so solid that I could not complete their extirpation. There subsequently persisted a large fistula, connecting the vagina with the iliac S at its upper part. I let the patient gain strength, and three months after the operation I made her undergo a *cœliotomy*. I easily detached the iliac S from its adhesions, and found a very large and lengthened fistula. I attempted to suture by means of catgut, in separate stitches, but the passage of the intestine absolutely closing, I was obliged to practice intestinal resection. I cut away about eight or ten centimetres of the intestine, and rapidly applied Murphy's button. Seventeen days after, the button was evacuated with pain by the patient. Yet after the tenth day normal defecation re-established itself, and the patient is now absolutely cured.

The last case of intestino-vaginal fistula is quite recent. It was a tuberculous disease of the appendages, with strong intestinal adhesions. The detaching of these brought about an entire rent of the intestinal coats. Four days after, the *fæcal* matters issued by way of the vagina. Three weeks after the operation, in the presence of persistence of the infirmity, I performed a *cœliotomy*. The search after the fistula was easy; in this case again, by reason of the extent of the wound, I resected a few centimetres of the intestine and placed Murphy's button. This patient died. A peritonitis declared itself after the escape of Murphy's button. I attempted, without result, a second *cœliotomy* with a fresh application of Murphy's button.

Vesical Fistule.—The wounding of the bladder in consequence of pelvic lesions. The above was a case of serious pelvic suppuration, in which I was obliged to abandon a part of the appendages in the pelvis.

Some time after the operation, the patient complained of being constantly wet. The micturition took place in a natural way. Vesical injections allowed no liquid to issue by the vagina. At the bottom of this passage there was to be seen a small orifice, by means of which the urine issued drop by drop.

We had before us a ureteral fistula. I catheterized the ureters and was easily able to ascertain the integrity of the right ureter, which showed me that the wounded ureter was the left one.

I performed a *cœliotomy* with the intention of curing this infirmity, by the suture of the renal end of the ureter to the bladder. But notwithstanding the most attentive searches, I could not find the left ureter. I then performed nephrectomy. The patient is cured.

I have made in these three cases of *cœliotomy*, consecutive to very

laborious total vaginal castrations, a proof of the greatest importance. In the three cases, the visceral adhesions which, at the time of the operation, were such that the total ablation of the appendages was, if not impossible, at least very laborious, had almost disappeared, and in three cases I easily reached the wounded intestines, which were at the bottom of the pelvis.

The hopes put forth, respecting the later consequences of total vaginal castration in pelvic suppurations, seems to be demonstrated in these examples.

Let us add to the above the 33 cases of intestinal fistulæ after ablation of the appendages by way of the abdomen, spoken of by Dudley, in the *American Journal of Obstetrics* of 1892.

Another danger, which I shall also avoid in the discussion, is that of hæmorrhage. The security of the hæmostasis evidently depends upon the instruments, but would one dare undertake a serious operation with imperfect instruments? No! I have only seen one case of serious hæmorrhage after the taking away of the instruments, but not a fatal one. I must add that it was a hæmophilic patient. Consecutive hæmorrhage is therefore a bugbear which will only stop the timid.

It has been said as a reproach to total castration by the vagina that danger might exist in complicated cases of leaving in the abdomen the remains of suppurating pockets. There are certainly cases of suppuration, wherein the fusion of the pockets with the neighboring organs is such, that complete ablation is impossible. In the 157 cases of serious suppuration upon which I have operated, I have left twenty-one times parts of the appendages in the pelvis, and I have never been obliged to have recourse to a supplementary operation by reason of tardy complications. Besides is not that what happens in laparotomies for very adherent purulent diseases of the appendages? Lawson Tait, Pozzi, Fenger, would they not have advised the opening of the pockets, their cleaning and drainage? Have they not observed definite cures?

It is at least remarkable that it is precisely in these serious cases that vaginal castration has given its greatest successes, which have gained to it confirmed laparotomists, such as Pozzi, Terrier, Sänger, and others. If a few operators have been obliged to have recourse to supplementary operations after vaginal hysterectomy, how many times have they not been obliged to fall back upon supplementary hysterectomy after a check sustained by the laparotomy?

As far as I am concerned, I have performed 14 hysterectomies of

this kind, 5 times after laparotomies practiced by me, and which have remained incomplete when looked at in a therapeutic light, 9 times after laparotomies practiced by Belgian or French colleagues. I have obtained 14 definite cures. If we admit that all diseases of the appendages which put woman's life in danger or which render her life miserable in consequence of constant pains and continual impotency necessitate surgical intervention, viz.: the ablation of the diseased organs, we will absolutely put aside all discussion as regards the abuse of operations. I wrote, however, on that subject a few months ago in the *American Journal of Obstetrics*.

Then let us now examine, before going into definite particulars of vaginal castration in the disease of appendages, what is the importance of the operation compared with that of the laparotomy.

I do not wish to go far into this question, the mathematical expression of operative mortality being always very relative. If we take into consideration the French laparotomists of incontestable renown, such as Terrier and Pozzi, in the cases of suppurated diseases of appendages, they obtain 6 and 8 per cent. of deaths in 96 and 99 cases.

My own statistics give, in 157 cases 3 deaths—that is to say, 1.9 per cent.; Leopold, in 14 cases, no death; Péan, in 350 cases, 7 deaths, 2 per cent.; Richelot, in 56 cases, 5 deaths, 8.9 per cent.; Ségond, in 114 cases, 13 deaths, 11.2 per cent.; Doyen, in 125 cases, 8 deaths, 6.4 per cent.; so we find in 816 cases 36 deaths—that is to say, 4.5 per cent.

Therefore in cases of suppurative diseases of the appendages the operation of Péan victoriously maintains the comparison with laparotomy; it is incontestable that the former is much superior.

In cases of non-suppurative: Ségond, in 82 cases, obtains no deaths; in 115 cases, I have had 3 deaths; Péan, in 100 cases, 2 deaths; Leopold, in 30 cases, 1 death; Sängér, in 17 cases, 2 deaths; Richelot, in 40 cases, 2 deaths; making, in a total of 584 cases, 10 deaths, or 1.7 per cent.

Laparotomy in these cases, equally, gives very brilliant results. One may even say that its dangers are very little. Thus in 461 cases, operated upon by Pozzi, Terrier, Schauta, there has been a mortality of 3.6 per cent. I have therefore the right to conclude that the operation of Péan is less dangerous than laparotomy in cases of suppurative diseases of the appendages; it gives as good results in cases of non-suppurative lesions.

If the experience and the careful examination of our patients during several months after operation give us the conviction that the

tardy results are much more brilliant after hysterectomy than those given after laparotomy, we shall remain convinced that total castration by the vagina is certainly the preferable operation in cases of bilateral disease of the appendages; it is less dangerous and gives more perfect cures.

Indications for Total Vaginal Castration in the Diseases of Appendages.—The indications of hysterectomy are the same as those of bilateral ablation of the appendages by cœliotomy. The bilaterality of the lesions, the uselessness of palliative measures alone make legitimate our intervention by way of the vagina. The diagnosis is of great value, but it is necessary not to make a bugbear of it. For if, since our efforts to popularize the vaginal method, the diagnosis has suddenly become difficult, it is at least singular to find that it is precisely those who found the diagnosis so easy when justifying the abdominal way, who pretend to-day that it is full of difficulties by the former method.

It is incontestable that one can always make the diagnosis whether the appendages are diseased or not, with or without anæsthesia.

What does it signify whether the tubes contain pus or blood—whether these collections be in the ovary or in the tubes? We must have before us the idea of perfecting a diagnosis as much as possible; but these points are secondary as regards our intervention. Besides, at the first time of intervention by the vagina, which should always be the opening of the pouch of Douglas, the real exploring point, the surgeon must always practice exploration by that way, although he may have to confine his operation to a simple elytrotomy, should such be necessary. These in doubtful cases!

When the diagnosis is certain, the exploration is superfluous, but it always constitutes an argument sufficiently strong for vaginal castration to be no longer an operation which unavoidably causes the ablation of the uterus as soon as it is attacked.

Finally bilateral lesions require total vaginal castration. Those lesions are suppurative or non-suppurative.

1. *Suppurative Lesions.*—When the pockets are very adherent according to the opinion of all surgeons of to-day, vaginal hysterectomy is the operation that should be chosen. If the pockets are free, then the operation of Péan is superior to laparotomy, for it permits an easy drainage, it is more complete, and never leaves any cicatrix. For my part I never hesitate.

If the adhesions of the lesions do not permit the complete ablation, we have seen that we should be wrong in fearing the possible reap-

pearance of inflammation of the remains left in the pelvis. In all cases wherein I have been obliged to act thus, I have never seen tardy complications.

It is not the same with abdominal operations.

2. *Non-suppurative Lesions.*—They comprise : 1. The non-suppurative salpinx. 2. The parenchymatous salpingitis. 3. The catarrhal salpingitis. 4. The degeneration of the ovary.

When the lesions are bilateral, they require the complete ablation of the appendages. All agree upon this point.

In these cases vaginal castration is as benign as is laparotomy, and it is more complete, the total ablation being the rule.

In all cases the cure may be called radical by our operation, whereas laparotomy leaves the woman exposed to uterine diseases, to persistent pelvic pains, on a level with the pedicles, and to nervous disorders.

F. I arrive at my last category :

Chronic and incurable diseases, and among them pelvic neuralgias, and tuberculosis. All those who have practiced laparotomy a great deal know the very little encouraging results that may be expected from bilateral castration in serious pelvic neuralgias, in cases where the most attentive examination does not succeed in discovering very clearly the lesions.

It is established to-day that the results acquired by the operation of Péan in these cases give more brilliant results than does laparotomy.

Out of the six cases of the sort I have operated upon I have five times seen the radical cure follow and maintain two, three, and four years after the operation, with women whose nervous systems were so shaken that they became morphinomaniacs.

Two of the above patients, hysterical persons, have had their attacks completely disappear. With the sixth person the therapeutic result is too recent to be affirmed.

Lastly, I have applied total vaginal castration in six cases of congenital tuberculosis. I have obtained five cures—one death. Four of the patients cured by the operation enjoy very good health, with the fifth patient pulmonary disease has set in since the operation. The number of these cases is too limited to deduct precise conclusions from. However, the results I have obtained are most encouraging and will guide me in cases of this kind, more toward vaginal castration than toward laparotomy.

I shall not enter into the details of the operation ; that would carry

me too far. Besides, they have been given to those among you who have had occasion to see applied the operation of Péan, in Europe.

Permit me in finishing to submit to you the following conclusions :

A. 1. Total castration by the vagina is indicated in uterine cancer at its beginning. 2. In uterine fibroid. 3. In extra-uterine pregnancy and total abortion. 4. In complete genital prolapse, according to the indications I have put before you.

B. It is the best operation in bilateral purulent or non-purulent diseases of the appendages.

C. It finds its indications in uterine and in chronic incurable diseases of the uterus and its appendages.

D. Complete vaginal castration is not a more dangerous operation than is laparotomy.

*The most Recent Statistics.**—Landau, 141 cases, 2 deaths; Léopold, 44 cases, 1 death; Sängér, 17 cases, 2 deaths; Péan, 450 cases, 12 deaths; Richelot, 219 cases, 11 deaths; Doyen, 253 cases, 18 deaths; Ségond, 200 cases, 14 deaths; Gallet, 29 cases, 2 deaths; Jacobs, 403 cases, 12 deaths. Total, 1,756 cases, 74 deaths, 4.2 per cent. mortality.

SPECIMENS OF TOTAL VAGINAL EXTIRPATION OF THE UTERUS, ALSO SPECIMENS OF LARGE FIBROIDS REMOVED BY ABDOMINAL SECTION.†

BY R. STANSBURY SUTTON, M. D., PITTSBURG, PA.

During my vacation last year (in 1894) I had the pleasure of witnessing five total extirpations of the uterus and appendages by Dr. Jacobs, at Brussels. I desire first, as a Fellow of the Society, to thank Dr. Jacobs publicly for his hospitality to me, and to bespeak for him a cordial welcome to the unbounded hospitality which has always characterized the great American medical profession to which we belong.

These cases, twelve in number, are all in whom I have removed the uterus *per vaginam* in my private hospital since my visit to Dr.

* Unpublished.

† Read before the American Gynæcological Society, May 29, 1895.

Jacobs, up to May 1, 1895, and which I respectfully submit for your kind consideration.

The method practiced by Dr. Jacobs is that of Péan, modified so far as the use of the cautery is concerned. Dr. Jacobs has already given you his technique, and I will not repeat it.



Uteri removed per vaginam. Cases I to XII in notes.

CASE I.—October 27, 1894, Mrs. S., aged thirty-three. Had her ovaries removed on April 7, 1893, a little over eighteen months previously. Since this operation she has been curetted for periodical hæmorrhages three times without relief. Uterus was found quite adherent, and was removed by Jacobs' modification of Péan's method.

She was out of bed on the seventh day ; recovery uneventful. The uterus contained nothing which would account for the hæmorrhages. Specimen lost.



Myoma.

CASE II.—Mrs. S., aged forty. Menstruation painful and irregular; left ovary prolapsed and adherent; right ovary and tube enlarged; specific chronic endometritis; uterus and appendages removed; left ovary large, tube thick as the thumb, filled with blood. Patient out of bed on the seventh day. Complete recovery, uneventful.

CASE III.—Mrs. W., aged twenty-nine. Ovaries and tubes removed for specific chronic salpingitis and ovaritis, April 24, 1893. Has continued to bleed irregularly and profusely; is slightly insane, with distressing insomnia; has been curetted several times; patient has recurrent pelvic peritonitis. Uterus found abnormally soft; en-

dometrium granular or villous. Sat up on the seventh day. Recovery uneventful. Dr. Edebohls was present at this operation.

CASE IV.—November 28, 1894, Mrs. H., aged thirty-six. Suppurative endometritis. Ovaries and tubes normal; uterus removed, appendages left. Sat up on the sixth day. Recovery uneventful.

CASE V.—November 29, 1894, Mrs. S., aged thirty-eight. Last confinement in 1879. Has been an invalid ever since. Tenderness at both sides of the uterus; has had convulsions during the last year, always at the menstrual period. Uterus and appendages removed. Sat up on the seventh day. Recovery uneventful.



Uterus, pregnant.

CASE VI.—December 1, 1894, Miss M., aged thirty-two. Fibroid, which weighed five pounds, growing out of the fundus; the uterus

was entirely removed by the vagina, but, owing to the extreme darkness of the day, I split the abdominal wall and lifted out the fibroid in less than one minute; no bleeding requiring attention, the wound was closed and patient put to bed. Recovery uneventful. The



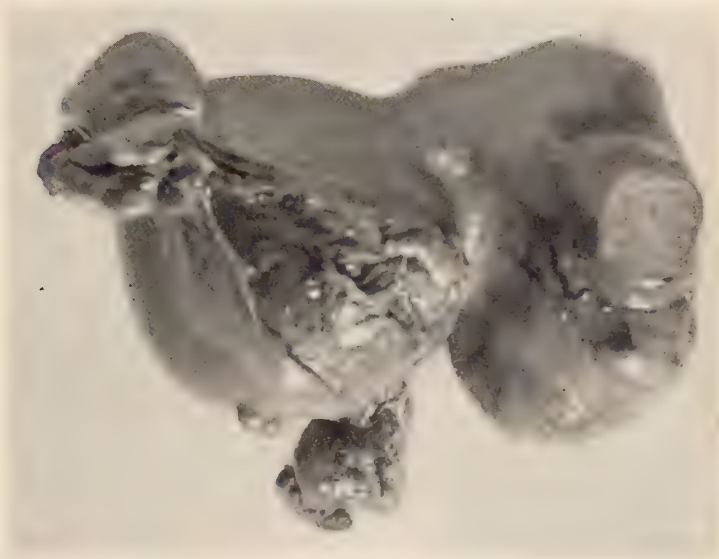
Tumor belonging to pregnant uterus.

specimens were taken by her physician to a distant point and afterward burned, so that I have not got them. It is possible that in this case I would have failed to remove the tumor by morcellement, it was so large and hard. At all events, discretion was the better part of valor in this instance.

CASE VII.—January 21, 1895, Mrs. G., aged thirty-eight. In October, 1893, her ovaries and tubes were removed; there was pus in both tubes; the uterus was normal in size and presented, from the abdominal side of the case, nothing unusual. Her irregular bleedings continued unabated. I removed the uterus by the vagina, and found

imbedded in the wall of the uterus a small fibroid tumor. Recovery uneventful.

CASE VIII.—February, 1895, Miss E., aged fifty-one, a woman of unusual refinement and very delicate. Has had uterine hæmorrhages for seventeen years, for which she has been curetted a great many times. Uterus movable, apparently normal in size, as are also her ovaries and tubes. This examination was the first and I had never seen the patient before. The persistence of the case and the age of the patient led me to suggest total extirpation, which suggestion was acceded to promptly. The character of the specimen which is here proves the correctness of my prompt action. A small sarcoma is seen in the fundus of the uterus. Recovery uneventful. Microscopical examination shows the presence of oval cells whose nuclei vary from the size of an endothelial cell to five times that size. The tumor invades the adjacent tissues, not being exactly circumscribed; there is considerable intercellular substance. Round-cell sarcoma.



Pregnant uterus and myoma.

CASE IX.—February 13, 1895, Mrs. H., aged thirty-seven; married nine years, and has one child aged eight years. Has had convulsions for four years, worse at the menstrual periods; had severe hæmorrhages for one year; uterus contains a myoma. The uterus, tumor,

ovaries, and tubes were all removed by the vagina. Recovery uneventful. Microscopical examination of tumor shows same to be a myoma.

CASE X.—February 23, 1895, Mrs. H., aged thirty-seven. Cervix lacerated; chronic specific endometritis, salpingitis, and ovaritis:



Myoma.

appendages adherent; all removed *per vaginam*. Recovery uneventful.

CASE XI.—March 9, 1895, Mrs. J., aged twenty-four. Husband had gonorrhœa before she married him. Chronic specific endometritis; pus tube on right side; left ovary and tube tender; uterus, ovaries, and tubes removed *per vaginam*. Six ounces of foul pus removed from tube during operation. Adhesions separated by finger following line of cleavage. Patient sat up on the sixth day. Recovery uneventful.

CASE XII.—April 11, 1895, Mrs. R., aged thirty-eight. Ovaries and tubes removed; left one nine years ago, and right one one year ago. Has had pelvic abscesses, and during the last year pus escaping by rectum. Uterus removed *per vaginam*. Recovered with a fæcal fistula.

These twelve cases of total extirpation in my private hospital were consecutive, and have all recovered as stated. They comprise all the total extirpations done in the institution by Péan's method up to May 1, 1895.

I beg to offer the following specimens also :

1. Obtained March 27, 1895, from a patient aged thirty years.

This specimen is one of multiple myoma which was removed by abdominal section, antero-posterior flaps of peritonæum, ligation of uterine arteries, amputation of cervix at internal os, interrupted suture of the antero-posterior peritoneal flaps, abdominal technique being of course as usual. No drainage. Patient recovered promptly, and left the hospital twenty-one days after operation.

2. Was obtained by operation, April 27, 1895.

Patient, aged twenty-nine years, had been married ten months; had missed two menstrual periods; presented herself with this enormous myoma, which weighed over ten pounds, growing like a mushroom. Pulse, 100. Temperature, 100.5°. I here present also the pregnant uterus, which I removed with the tumor. Patient recovered without any difficulty.

3. This specimen, consisting of a subserous myoma, was obtained May 9, 1895, from a young woman twenty-eight years of age, who was pregnant for the first time for three and a half months, and was suffering great pain. Her tumor made its appearance—in accordance with her story—within eight or ten weeks. The operation was done in the same manner as in the previous case, and was followed by the uninterrupted recovery of the patient.

4. This specimen of multiple fibroids was obtained by operation on March 1, 1895, from a lady aged thirty-six years. She was very feeble and anæmic when operated upon. The operation was done by the same method as in other cases, except that I placed her in the lithotomy position and took out the cervix. She died three days afterward from exhaustion.

THE TREATMENT OF PUERPERAL ECLAMPSIA.*

BY THAD. A. REAMY, M. D., LL. D., CINCINNATI, OHIO.

This paper, like the one that I last had the honor of presenting to this Society, is purely clinical. The simple recital of a few cases coming, within a given time, under my own observation, including also some experiences of friends. No attempt is made to quote the literature of the subject. Nor is the general treatment, prophylactic, obstetric, and otherwise, discussed, my chief object being to still further emphasize the value of *veratrum viride* in the treatment of eclampsia.

The number of cases is small, owing to two facts: First, I have during the past eight years refused general obstetric practice. Second, the relative number of cases of eclampsia occurring in Cincinnati and vicinity is smaller than in some other localities. This observation applies to hospital as well as private practice.

These cases are presented with sufficient detail to bring the clinical picture before you that you may be able to judge of the relations between treatment and results. In this way only can clinical lessons be instructive.

CASE I.—January 10, 1888, I was called by the late Dr. John Rendigs to see Mrs. T., whom he had delivered of a male child three hours before. The patient was a robust German woman above medium height, muscular, a blonde. This was her second confinement. She had been in perfect health prior to labor. Dr. Rendigs informed me that examinations of the urine during the month previous had shown it to be normal.

The presentation was vertex. The labor was rather rapid, delivery occurring within two hours after the first pain. The placenta promptly delivered. Twenty drops of fluid extract of ergot administered by the mouth as soon as the placenta was delivered. Half an hour after delivery, as the doctor was about to leave, the patient complained of frontal headache. Said she could not see objects at the opposite side of the room. The pulse was found to be 110, strong. She was seized with a convulsion which was violent and of long duration. The tongue was bitten. As soon as she could swal-

* Read before the American Gynecological Society, May 29, 1895.

low she had twenty grains of potassium bromide. Within half an hour another seizure, which proved even more severe. The succeeding unconsciousness was prolonged, stertor loud. Pulse 115, very strong. When I arrived she was in the midst of the third convulsion. So violent and prolonged was this attack that death from asphyxia seemed imminent. At the close of the struggle the pulse was 110, full. Within ten minutes it was 125 and of great force. I gave hypodermically twenty drops of Norwood's tincture of veratrum viride. The patient was yet unconscious. Within twenty minutes the pulse had fallen to 106, not so full. Fifteen minutes later the pulse was 70, soft, compressible. Respiration, 16. Urine passed in bed. Patient remained quiet for an hour, when she became restless and pulse went up to 90, with more volume. Gave verat. hypodermically. Within twenty minutes pulse 70. Twenty minutes later pulse had fallen to 40, soft, but regular. Most profuse perspiration; conscious.

An hour later the pulse was 50, the patient cheerful, quiet. Bladder emptied by catheter so as to examine urine, which contained only a trace of albumin.

This patient went on to rapid convalescence. No albumin in the urine after the fifth day.

CASE II.—C. F., admitted to my service in the Cincinnati Hospital July 7, 1890. Dr. Lincoln Mussey, interne, in charge. Patient a well-developed brunette aged eighteen, unmarried, missed menstruation about October 25, 1889. Abdominal enlargement equal to eight months' gestation. Foetal heart distinct in the second region. General health good. Feet, however, swollen. Urine, thirty-six ounces in twenty-four hours. No albumin.

From July 12th to August 1st the urine contained from three to five per cent. of albumin, and occasionally the quantity of urine was below normal. Patient meantime was largely on milk diet, with diuretics. Occasionally the hot pack.

Labor commenced at midnight August 1st. Dr. Mussey in attendance. Patient suffered from some headache. Presentation was second position of vertex. Labor progressed well, and at 7 A. M., August 2d, spontaneous delivery of a healthy female child, weight 7.5 pounds, occurred. Uterine contractions good; placenta delivered within fifteen minutes. Perinæum slightly lacerated; two stitches inserted.

5 P. M.—Rested well all day. Urine drawn by catheter, slightly albuminous, no casts, quantity normal. Patient has severe headache.

Ordered thirty grains of bromide of potassium, to be repeated, with chloral, if headache continues.

1 A. M., August 3d.—Has not slept. Headache severe. Urine passed voluntarily. Bromide of potassium and chloral repeated.

3 A. M.—No sleep, restless. Ordered five grains of phenacetine.

5.45 A. M.—Fifteen minutes after taking phenacetine fell asleep, which has continued until now. Says she feels well. But ocular symptoms marked. Eyes turned upward. A most violent convulsion immediately occurred, followed by profound unconsciousness, with loud stertor. Pupils active. No deviation; pulse 84, full and strong. Ordered twenty grains of hydrate of chloral by the mouth.

6.45 A. M.—Another convulsion still more severe, lasting two minutes; tongue bitten. Cyanosis profound. Pulse 110, full, strong. As soon as consciousness was restored, chloroform inhalation commenced. An enema of glycerin in solution of salt water was administered, soon followed by a copious stool. Urine passed unconsciously. Administered, in butter, calomel, bicarbonate of soda, each ten grains; croton oil, one drop.

Chloroform inhalation continued at intervals.

8 A. M.—Another violent seizure, lasting three minutes. After the convulsion ceased patient seemed to be dead for a time. Period of unconsciousness prolonged. Pulse 102, full and bounding. Administered another enema. Bowels freely moved. Was also put in hot pack.

10 A. M.—Dr. Reamy arrived. Patient unconscious. Stertor loud. Pulse 102, unusually strong, carotids throbbing, pupils unequal, cyanosis marked. Ordered chloroform discontinued. Norwood's tincture of veratrum viride, twenty drops by the mouth. Ice bag to head.

11 A. M.—Pulse 99.

11.40 A. M.—A slight convulsion. Just before this attack she passed, spontaneously, about sixteen ounces of urine.

1.30 P. M.—Pulse 102, full, unconscious, but stertor not so marked. Color in face better. Administered fifteen drops of tincture of veratrum viride.

2.20 P. M.—Quiet. Twenty drops of veratrum, as pulse had not been affected.

2.40 P. M.—Repeated twenty drops of veratrum.

3 P. M.—Temperature 100.4°. A violent convulsion. As soon as she could swallow, though still unconscious, she was given thirty drops of tincture of veratrum viride.

4 P. M.—Pulse 92, softer. Resting quietly.

4.30 P. M.—Fifteen drops of tincture of veratrum.

5 P. M.—Pulse 76, soft.

6.45 P. M.—Slight convulsion. At its close passed urine copiously.
Pulse 80. Gave thirty drops of tincture of veratrum viride.

7 P. M.—Quiet; semiconscious; pulse 72, soft.

7.30 P. M.—Conscious. No stertor. Pupils equal.

9 P. M.—Pulse 54, soft, regular.

11 P. M.—Pulse 60, soft; ordered ten drops of veratrum.

August 3, 8 A. M.—Slept all night. Has taken milk, passed urine, albuminous trace. Pulse 66, soft. Temperature 98.5°.

10 A. M.—Pulse 66, soft.

This patient's convalescence from this time on was uninterrupted, except that she continued to suffer from more or less headache. She was kept for several days under the use of ten-drop doses of tincture of veratrum three to four times daily. She was discharged from the hospital in perfect health September 3d.

CASE III.—February 23, 1889, saw in consultation with her family physician, the late Dr. Agin, Mrs. T., aged thirty-four. She had been delivered at term, by Dr. Agin, of a healthy male child eight hours before my visit. This was her third confinement. This labor had been tedious and unusually painful. An hour after delivery she had been seized with a violent convulsion, followed by prolonged unconsciousness, with loud stertor.

Notwithstanding she had taken chloral and potassium bromide in full and repeated doses, and had chloroform inhalations almost constantly, except during the convulsions and the first moments of succeeding unconsciousness, had suffered from four seizures, and the fifth occurred within ten minutes after my arrival. This was a most desperate one, the tongue being badly lacerated. The following unconsciousness lasted half an hour and was profound. Pulse 110, but only moderately strong. Temperature 100°. Pupils slightly dilated. Urine, obtained by catheter, showed about six per cent. by bulk of albumin.

I administered hypodermically three quarters of a grain of sulphate of morphine. Within twenty minutes after the morphine was administered her breathing was normal, the pupils normal, pulse 80, soft, but fuller. She now passed into apparently natural sleep, which on my return, I was informed, had lasted eight hours, when she awakened, asked for water, and was given milk, when she again went to sleep, from which she did not awaken for four hours longer.

Recovery was rapid and perfect. Albumin in small quantities was shown in the urine for three days, when no trace continued.

Morphine was given in this case instead of veratrum, because the patient was of an exceedingly nervous temperament, had suffered an unusually severe labor, the pulse being weak and the pupils dilated. Notwithstanding the fact that the first seizure did not come on until after delivery, yet I considered the case as one of reflex origin.

CASE IV.—December 24, 1890, I was called to see Mrs. G. S., whom I had been engaged to attend in her first labor. Her computed time was December 16th.

She was a blonde, small of stature, but well developed and muscular. The urine had been examined frequently during the previous two months and found normal. An examination made three weeks previously had shown pelvic measurements satisfactory, child alive, vertex presentation. When I was called she had been in labor about two hours. Dilatation to size of a silver dollar. Pains fairly good. She had headache; pulse 80, strong. Bowels constipated. Urine contained by bulk about seven per cent. of albumin. Quantity of urine about normal.

A glycerin and salt-water enema was at once followed by a copious stool. Urine was also passed. After the bowels were evacuated, thirty grains of chloral hydrate, dissolved in milk, were given by enema. This was retained. Pulse was now 90, full and strong. Temperature 99.5°. Headache somewhat mitigated. A hot pack was employed, as I had apprehensions of convulsions.

Within two hours dilatation was complete and the head pressing the perinæum, though pain had not been severe. Chloroform by inhalation was now commenced, as is my universal custom, for the second stage of labor. She had not yet come under the influence of the anæsthetic when, during a pain, she was seized with a convulsion which was severe, lasting nearly two minutes. Not waiting for consciousness, the chloroform was pushed, the short forceps applied, and delivery speedily effected, the patient meantime unconscious. The perinæum was not injured. The child, a male, was resuscitated with some difficulty. Good uterine contraction with speedy delivery of the placenta followed. Pulse 80, not very full. Temperature 99°.

Half an hour after delivery she had intense headache, pulse 100, strong. She was restless; ocular symptoms manifest. I gave hypodermically twenty drops of Norwood's tincture of veratrum viride.

No sooner was the injection completed than she was seized with a convulsion more violent than the first. After this attack cyanosis was alarming. Very loud stertor. Pulse 120, full and strong. Repeated injection of fifteen drops of veratrum. Within twenty minutes copious evacuation of urine in the bed. Breathing more natural. Pulse 90, softer. Half an hour later pulse 60, soft, not so full. Free vomiting now occurred, when pulse fell to 40, soft, somewhat feeble. Copious diaphoresis followed with evacuation of nearly a pint of urine. Extremities cold. Patient perfectly conscious. Respiration 12. Administered, hypodermically, five eighths of a grain of sulphate of morphia. Within twenty minutes the patient was asleep. Slept continuously five hours. During this time pulse 70, soft and regular, good volume.

She awakened for ten minutes, asked for water, which was given her. She then slept for three hours; moderate diaphoresis during the whole time of sleep. When she awakened, pulse was 71, normal. Temperature 99.7°.

Convalescence was uninterrupted. Slight traces of albumin in urine for three days, when it disappeared.

CASE V.—April 23, 1893, I saw, in consultation with Dr. Coffman, Mrs. B., who had been in labor five hours. This was her second confinement. The first had been uncomplicated.

An hour before my arrival the patient had been seized with a violent convulsion, followed by profound unconsciousness, with stertor. The convulsion had come on during a uterine contraction. The doctor had freely administered chloroform by inhalation. Labor had since the convulsion progressed well. But severe frontal headache, with complaint of flashes before the eyes and restlessness, caused the doctor to fear another seizure. He was all the more apprehensive because he learned that during the past week not more than twenty ounces of urine had been passed each twenty-four hours, and an examination of a specimen procured that day had shown it to be very albuminous, though the actual proportion was not ascertained.

As dilatation was now complete and the head pressing the perinæum, though not distending it, she was at my request brought rapidly and profoundly under chloroform, the forceps applied, and a living male child promptly delivered. The placenta was delivered within five minutes, and good uterine contraction followed. The pulse was 80, rather full. Temperature 99°. No headache, patient cheerful, intellect unclouded. Four ounces of urine obtained by catheter showed a small amount of albumin. Microscopic examina-

tion of this specimen made six hours later showed a few hyaline casts.

Forty minutes after delivery, while the doctor and the writer were considering the plan of treatment to be followed, and when I was about to leave, the patient cried out, "Oh, my head!" and was seized with another convulsion, which proved to be most severe, and in every particular typical.

Pulse at the wrist was now 115, very full and sharp; pupils unequal, the right more dilated than the left. I had in my pocket a supply of Norwood's tincture of veratrum viride, of which, with Dr. Coffman's consent, I injected into the arm twenty-five drops. Within twenty minutes breathing was easier, color of face better, and pulse had fallen to 95, and softer. In twenty minutes more the pulse was 60. In ten minutes more—that is, fifty minutes after the administration of the veratrum—the pulse was 37 and the patient was perspiring most profusely, with extremities cold. No vomiting. Immediately I injected subcutaneously half a grain of sulphate of morphine. Within ten minutes the pulse was 50. Within twenty minutes more the pulse was 60, of good volume, but soft. The patient was in a sound, apparently natural sleep. In this condition an hour later, with pulse 70, I left her.

The doctor informed me that she slept tranquilly seven consecutive hours; that she awakened apparently well; that immediately upon awakening she passed a large amount of urine. From this on the secretion of urine daily was abundant. That within three days samples obtained by catheter, so as to avoid lochial contamination, showed no albumin.

Her recovery was rapid and perfect.

CASE VI.—Mrs. H., aged thirty, primipara, was delivered by me at term March 10, 1894. Frequent examination of urine during previous two months had given negative results; quantity also normal. At the close of the first stage of labor the bladder was emptied by catheter. This urine contained a trace of albumin.

Labor was normal, though first stage somewhat prolonged. At the close of the first stage she was allowed chloroform inhalation, and delivered without forceps, being wholly unconscious when the head was delivered. Uterine contraction prompt. Placenta delivered spontaneously within five minutes. Temperature was now 99°, pulse 78, rather strong. No headache. No ocular symptoms.

An hour after delivery, as I was about to leave, she complained of frontal headache, was restless, said she could not see as well as usual.

I now found her pulse to be 120 per minute and bounding ; temperature 100°. Recognizing the peril of an impending attack of eclampsia, I gave her by the mouth twenty-five drops of Norwood's tincture of veratrum viride, and had the ice bag applied to her head. In twenty minutes her pulse was 105, softer. In forty minutes pulse was 70 and she was perspiring ; headache gone. She now vomited, after which pulse fell to 50. Perspiration most profuse. Was given by the mouth a tablespoonful of whisky. In an hour pulse 72, normal. No headache. Fell asleep and slept two hours. Complained of fullness of bladder on waking ; was catheterized. Sixteen ounces of albuminous urine obtained. Two hours later I left her. Convalescence uninterrupted. No albumin in urine after third day.

That an attack of eclampsia was averted by the veratrum I have not the slightest doubt.

But one other case of eclampsia was seen by me within the time specified. This was in consultation with Dr. G. Taylor. The woman died of cerebral hæmorrhage, as disclosed by post-mortem examination, during the second convulsion, the event occurring just as I entered the room. The post mortem also revealed acute atrophy of the kidneys. Not more than eight ounces of urine had been secreted in thirty-eight hours preceding death.

The following summary is extracted from a private communication kindly made to me by Prof. W. E. Kiely, of this city:

Patient thirty years old, pregnant, under his charge for the third time. Has had albuminous urine for one year. This labor came on at six months' gestation. For three days urine had shown, by bulk, about ninety-five per cent. albumin. Œdema of feet, legs, and face. Headache.

A convulsion occurred at 11 A. M., October 25, 1894. Delivery October 26th at 7 A. M. Had in all six convulsions. On the doctor's arrival, at 5.45 P. M., October 25th, he gave by the mouth forty grains of sodium bromide, twenty grains of chloral hydrate, and half an hour later, hypodermically, one sixth of a grain of muriate of pilocarpine. As the child was dead, under chloroform an æsthesia dilatation of the os was commenced at 3 P. M., but delivery did not follow. She had two convulsions during this process, chloroform inhalation continuing. At 4.45 she had, hypodermically, fifteen drops of veratrum viride. At 5.30 another convulsion, most violent ; fifteen drops of veratrum repeated. Prof. W. H. Taylor now in consultation ; at 6.15 twenty drops of veratrum repeated. At 7 P. M. the pulse was 26 and full. At 8 P. M. pulse 32, full. At 10 P. M. pulse 40. At 5 A. M. on the 26th labor pains were

strong. She was brought under chloroform and speedily delivered by forceps. Recovery good ; but she still has albumin and casts in her urine.

A very remarkable and instructive feature of this case is the safe recovery from such profound effects from the veratrum ; also that notwithstanding the pulse-rate was but 26, the volume was good. This latter may explain the possibilities of recovery from veratrum depression without the use of stimulants.

CASE.—Prof. W. H. Taylor (private communication) saw in consultation with Dr. Brent, of this city, a primipara aged thirty-eight. Labor commenced at 12 M. At 6.30 a severe convulsion. Had twenty grains of chloral hydrate and thirty grains of bromide of potassium. By 7 P. M. she had another convulsion ; chloral and bromide repeated. No dilatation of os had occurred. Another convulsion ; comatose condition profound. By the mouth thirty drops of tincture of veratrum viride. This dose repeated four times within five hours. At 4 A. M. artificial dilatation and forceps delivery ; one convulsion after delivery. Convalescence good.

Prof. J. M. Withrow reports (*Cincinnati Lancet and Clinic*, March 11, 1893) two cases of eclampsia :

CASE I.—A primipara seen in consultation with Dr. Carmichael. She had been delivered at 4 P. M. Dr. Withrow saw her at 9 P. M. She had then had eight convulsions, four of them prior to delivery and four after delivery. Those after delivery more severe than those occurring before ; they were in such rapid succession that consciousness was not recovered between the attacks. She had been given full doses of chloral hydrate, bromide of potassium, and had chloroform inhalations. Her temperature was 99°, pulse 140, full and strong. Thirty drops of Norwood's tincture of veratrum viride were given by the mouth, though she swallowed with difficulty. Within fifteen minutes she had another convulsion, very severe. Contortions violent ; cyanosis profound ; stertor loud. Uterus contracted and pressed violently against the abdominal wall. Fifteen minutes elapsed after the fit, and, as the pulse had not been affected by the veratrum viride, one teaspoonful of Norwood's tincture was given *per rectum*.

She now became restless and received, hypodermically, one quarter of a grain of sulphate of morphine. Pulse fell about ten beats every fifteen minutes until it reached 60 per minute—soft, regular. At 2 P. M. pulse had fallen to 48 ; another quarter of a grain of morphine injected. Pulse advanced to 60. At four o'clock it had fallen to 44, full and regular. Patient quiet and copiously perspiring. Pulse

remained at 60. Urine albuminous. Recovery prompt and satisfactory.

CASE II.—Mrs. M. K., primipara, thirty years old. From the sixth to the eighth month of gestation feet badly swollen, but no albumin in the urine. But nine days before labor came on urine contained twenty-five per cent. of albumin.

She was placed on milk diet and cathartics were employed. Albumin reduced to five per cent., voiding forty ounces in twenty-four hours. Labor normal except that first stage was prolonged.

When the head was pressing the perinæum, dilatation being complete, chloroform inhalation having commenced, she was seized with a violent convulsion. As soon as she was quiet Dr. Withrow gave, hypodermically, ten minims of Norwood's tincture of veratrum, the pulse being 120 and of great force. She was then quickly anæsthetized by ether, and a living child delivered by forceps. After delivery the pulse increased to 140, temperature to 100°. In half an hour another violent convulsion occurred. She came out of it with pulse 140, very hard and full, temperature 100.5°. By hypodermic syringe she again had ten minims of tincture of veratrum. Within fifteen minutes pulse-rate was rapidly diminishing, and she was in a copious perspiration. One hour later she was given hypodermically one quarter of a grain of sulphate of morphine. She fell asleep. Four hours later the pulse was 48. Respiration 8 per minute. This condition continued for two hours, when the injection of five minims of tincture of digitalis brought the pulse up to 60. Recovery now went on rapidly.

Before commenting upon the cases here presented, I may remark that I have good reason for believing that the veratrum administered in the case occurring at the Cincinnati hospital was not a reliable article, which accounts for the tardiness of its action and the frequency of administration in large doses found necessary.

Nothing can be more striking than the promptness with which, in all of these cases, the convulsions were arrested just so soon as the depressant effect of the drug upon the heart was profoundly manifested. In this regard fully corroborating the observations of Fearn, Boyd, and others; among them our fellow, Dr. Charles Jewett, as detailed in his admirable paper read before this Society and published in vol. xii of the *Transactions* for 1887.

The power of veratrum in immediately controlling the convulsions can be comprehended when it is remembered that this agent is one of the most potent of the arterial and spinal depressants. Prof. H. C. Wood, after careful experimentation, informs us that veratrum lowers

the pulse-rate both by a direct action on the muscle and by stimulating the inhibitory nerves. It diminishes the force of the heart beat by a direct influence on the cardiac muscle, and produces a general vaso-motor paralysis.

If the power of this agent were limited to arresting the convulsions it would be of great value. But it goes much further. It produces copious perspiration, although its action here is perhaps not direct, but due to the profound arterial depression (Wood). A still more important action is the pronounced diuresis which follows the muscular relaxation. This was strikingly illustrated in the cases here reported. I do not know how this diuretic influence is secured. Very possibly, as suggested by Prof. McCorkle, this effect is accomplished by the drug overcoming the vaso-motor spasm of the renal vessels. However, this effect can not be overestimated; for whatever views may be held as to the ætiology of puerperal eclampsia, there are few who will question that toxæmia plays no secondary rôle, and that the kidneys stand first in the order of elimination.

In order to sustain this proposition it is not necessary to assume that disease of the kidneys is associated with every case of eclampsia. On the contrary, we know that such is not the fact. Even severe cases occur when no evidence of kidney lesion exists. In some cases no albumin is found either before or after convulsions, though the latter instances are rare.

Nevertheless, no one can read the learned paper of another of our fellows, Dr. William Richardson, published in vol. iii of the *Transactions* of this Society on the Acute Parenchymatous Nephritis of Pregnancy, with an exhaustive report of cases, without being convinced of the important relations between a diminished activity of the kidney and eclampsia.

Still further interest in this subject will come to any one who will read the report of Dr. Turner, pathologist, made on examination of the kidneys of a woman who died of eclampsia, in the charge of Dr. Ernst Herman. (See *Transactions of the London Obstetrical Society*, vol. xxxiii, p. 338.) He says the kidneys "showed changes attributable to some toxic matter in the blood."

In another case, reported by Dr. Leonard Cutter (*London Obstetrical Transactions*, vol. xxxvi, p. 176), the pathologist reported upon the kidneys that the changes were like those of blood poisoning rather than inflammation." No doubt the acute cerebral anæmia upon which the eclamptic attack immediately depends in a majority of cases is due to cerebral vaso-motor spasm—and that this is due to

toxæmia, and the toxæmia to cell activity of the mother and of the child *in utero*. The accumulation of these toxic products can only be prevented by securing activity of the kidneys, skin, and bowels. The removal of dangerous accumulation, when it has occurred, must be accomplished through the same emunctories.

Immediate arrest of the convulsions is an important consideration because in those alone there is peril, and so long as they continue, the underlying causes will increase, and the danger thus be intensified. It is therefore most fortunate that we have an agent that will in most instances arrest the attack, and then act most efficiently in removal of its cause.

It has been claimed that bloodletting will with equal promptness and certainty produce diminished heart force and paralyze the vasomotor system. Bloodletting within the range of safety will not accomplish these results so well.

When the depressing effects of veratrum are passed the patient is none the worse for the depression. Not so with bloodletting.

It is objected that the remedy is dangerous. On the contrary, it is with proper management without danger. With the patient kept in the recumbent posture an adult may take by mouth half a drachm at a dose without much inconvenience. And when alarming depression supervenes morphine or tincture of opium hypodermically will at once remove the unpleasant symptoms.

In judicious hands I consider the danger of fatal depression from veratrum almost *nil*. Lusk, in his admirable work on obstetrics, after quoting the enthusiastic statements of Fearn as to the value of this drug and its probable mode of action in these cases, gives his hearty assent to the statements, but expresses his own fear of danger.

Finally, it must be regarded as fortunate that morphine, one of the most certain and prompt agents in counteracting any alarming depression that might arise after the administration of full doses of veratrum, is itself an agent of great power in controlling the disease under consideration. Thus the mixed treatment may in many cases be preferable.

TRACHOMA OF THE FEMALE GENITO-URINARY TRACT.*

BY ARTHUR W. JOHNSTONE, M. D., CINCINNATI.

Scattered through the literature of gynæcology you will find slight reference to such terms as granular vaginitis, kraurosis vulvæ, vascular degeneration of the vulva, and a great deal on the subject of vaginismus. My belief is that the majority of cases thus classified are nothing more than the varying forms and conditions of trachoma. During six months that I spent in Birmingham I saw quite a number—at least half a dozen cases—of so-called vascular degeneration of the vagina and vulva. You all understand that it is a very chronic trouble, and results finally in the formation of cicatricial tissue, which gives in some cases the most terrific deformities, and goes on even to the blocking and closure of the whole passage in a few of the most extreme cases. These cases I watched with the greatest of interest. One or two I traced up for fully six months. But I found, after careful study, that it was dealing rather with the results of the disease than with the disease itself; but I never got the true idea of what the character of the disease is until about two years ago. You all know that I came into this specialty from the eye. My former experience has made me thoroughly familiar with what trachoma of the eye is. Since I got the clew, two years ago, I have been searching for the disease carefully, and within two years I have found no less than six cases. The appearance of the vagina and vulva is exactly that of an acute trachomatous inflammation of the eyelid, extending all over them, beginning with the clitoris, running down from the apex of the triangle, around the urethra, spreading out on the nymphæ, dipping back into every fold and crypt until it reaches the urethra, running up into the canal a greater or less distance, then turning on down through the nymphæ and the carunculæ myrtiformes, it finally disappears some distance up the vagina, making the fourchette one of its last strongholds. The first thing that will strike you about it is its deep crimson color. The next most striking point is the thinness of the discharge which comes from it. It is never a creamy pus unless the patient has recently taken cold, but a thin, ichorous, watery discharge. Every

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papilla is enlarged so as to give the mucous surface a sago-grain appearance, and down between each papilla you are very apt to find little fissures which have cracked clear through the mucous membrane, and these are found particularly in the fourchette and between the carunculæ myrtiformes, and occasionally just in the edge of the urethra. These fissures are nearly always bathed in a thin, watery, serous fluid. The two foci at which the inflammation seems to be most intense are the urethra and the carunculæ myrtiformes, or the hymen if it still persists. These patients are the greatest sufferers I know. Not only do they have the most exquisite pain on the slightest touch, but the whole nervous system later gets completely upset by it. Another peculiarity about it is that in the acute stages, just like in the acute inflammatory stages of ocular trachoma, a very slight touch is all that is necessary to produce bleeding. The epithelium is gone in these little crevices I have spoken of, and sometimes the crests of the papillæ themselves are denuded and the whole tissue infiltrated and swollen. The cases are always of long standing—I mean by that several years. Those of you who are familiar with trachoma in the eye will be struck at once with the similarity in the course of that in the eye and that in the female passages. Of course the histories of the two are identical.

This inflammation, if let alone, runs on to the formation of new connective tissue, and it is this early stage which has gotten for it the name of granular vaginitis. Unfortunately, the term granular vaginitis embraces two distinct diseases. In my experience a few of these cases are due to trachoma, but the large bulk of them are of gonorrhœal origin; but the gonorrhœal is easily differentiated from the trachomatous, first by the clinical history, and second by the different scene. In the gonorrhœal you have a swollen condition of the whole membrane, and it is pouring out large quantities of mucopurulent matter, whereas the secretion in trachoma, as I have already said, is a thin watery, irritating, affair. The gonorrhœal inflammation runs its course in a comparatively short time—that is, its cycle is measured by months; whereas the trachomatous one, left to itself, can be measured only by years. The gonorrhœal does not have acute exacerbations so often. Taking cold, exposure, general upsets of one kind and another, do not aggravate the gonorrhœal like they do the trachomatous form. This is about the only disease with which trachoma is likely to be complicated. But if you remember those two symptoms, the length of time and the differences in the appearance of the diseases, there ought to be no difficulty in differentiating the two.

One other symptom, and that is, the trachomatous conditions rarely ever begin about the cervix, but from the increased redness you will see they commence near the urethra or the carunculæ myrtiformes and gradually shade off as they go from these. But I have seen one case where the inflammation spread clear up to the cervix, but the cervix itself was not the most intense point of inflammation. Whereas in simple vaginitis due to irritations from the products of chronic metritis, the cervix itself is always the most intense point of inflammation, and you can trace directly the course of the irritant fluid by the shadings of the vagina. So much, then, for the early stages of this disease.

After the disease once gets thoroughly established these mucous fissures are formed and a constant source of chronic irritation is set up, new connective tissue begins to form, and we get the irritable state of the nerves which we have in fissure of the anus or fissure anywhere else, and as the result of it we have the spasm of the muscle, so that there is that extreme irritability just like in trachoma of the eye, and we have a vaginismus which is exactly the same thing as the blepharospasm of ocular trachoma. So my belief is that at last we have a key to those heretofore inexplicable cases of vaginismus—that is, that it is due to little overlooked fissures lying about the vulva among the carunculæ myrtiformes, and about the mouth of the urethra, which are constantly sources of irritation to the peripheral nerve, and that until this inflammation is cured we can no more expect the constrictors of the vagina to let up their muscular spasms than we could expect to cure the orbicular spasm without the same kind of therapeutic treatment. As soon as I got the idea that the vagina and vulva were very similar structures to the conjunctiva, and that this was a true trachomatous condition, I went to treating it in the same way as we do ocular trachoma, and, I am happy to say, with the most satisfactory results. As I have said, I have now seen six cases. I began that treatment with a fifty-per-cent. solution of the peroxide of hydrogen sprayed on with an atomizer three or four times, and kept playing until the surface was thoroughly clean. Then, if there are raw surfaces underneath, I have used an ointment of the yellow oxide of mercury twice daily with the most satisfactory results. The coloring of the inflammation begins to fade at once, and in the course of a very few weeks you will find a decided improvement in all of the symptoms. At the start the introduction of the index finger will make the patient writhe with the most excruciating pain, and you will feel the constriction of the muscles in

tonic spasm. Two or three weeks of this treatment is usually enough to very materially modify this spasm and to quiet down the nervous condition. You will find, though, that these cases are just like trachoma of the eye in another way, and that every time they take cold, every time they are exposed in any way, get run down from overwork or fatigue of any sort, the inflammation again lights up, and for a few days you may have to discontinue the use of your mercurial ointment and use rather soothing applications, and at the same time go to work to break up the cold or to get rid of whatever the source of disturbance has been. Just like in the eye, I find different patients stand different strengths of the yellow oxide. One could only stand four grains to the ounce, whereas others would stand ten very comfortably. When it is too strong the reaction it produces aggravates all the symptoms; but I have always found that weakening down the ointment was all that was necessary to start a satisfactory progression toward convalescence. These patients may be of any age. The youngest that I have found was nineteen and the oldest fifty-five. In two of the six I have found trachoma of the eyelid. In a third I found a mother whose only child had had severe, persistent trachoma of the eyelid. So that my belief is that the mode of infection is carelessness about the use of the bath towel; for, unfortunately, some people think that it is only necessary to be particular with the towel for the face, and that any towel will do for the bath. So that whenever you suspect trachoma about the vagina it would be well to investigate the eyes of the whole family. I have not yet had enough experience with it—for, as I have said, it is only two years since I made the discovery—to say positively whether this is the sole cause of vaginismus or not, but I suspect it plays a large rôle with it. Five out of the six cases had it in a very marked way, and they were the only cases of vaginismus I saw during this time. One of the most persistent cases of vaginismus I saw several years ago I know had exactly this condition of the vulva and vagina, but I did not have sense enough then to appreciate what it really meant. So far as I can recollect, every case of vaginismus I ever saw had a very similar condition. So that my belief is that if we watch it carefully we will find trachoma, whatever it may be, of the genito-urinary tract plays a very large rôle in our cases of vaginismus.

As to the pathology of this subject I am as much in the dark as the oculists are. So far they have not worked out any special germ. It seems to be a mixed infection, a great many different germs being found in it. And as there are always so many germs about the

vagina, it would be very hard indeed to work out any particular germ of trachoma there. As I have already intimated, vascular degeneration of the vagina and the other name for the same thing kraurosis vulvæ, is nothing but a logical result of an old neglected trachoma which has gone on to the formation of cicatricial tissue, and is an analogous condition to the symblepharon, ankyloblepharon, and all the other deformities of the eye for which trachoma is so proverbial. When the disease has progressed to this state there is very little we can do to repair the ravages wrought without plastic operations, but I can testify that even in this condition the use of the yellow oxide and thorough cleanliness make the patients very comfortable. I have one case on hand now which I have been watching for eighteen months which has complete blocking of the vagina about two inches up the canal. She came to me with all the symptoms that I have heretofore described, plus cicatrices which blocked the canal completely. She is already past the change of life some years, and was having all the nervous manifestations, combined with the exquisite tenderness of the vulva and vagina which I have spoken of. The use of the yellow oxide keeps her perfectly comfortable. The redness has faded away, the fissures have all closed up, and she now presents a perfectly healthy mucous membrane. Not knowing just how far up the cicatrix goes, and not being able to tell her just how much danger the operation of opening this closure may involve, she has not yet had it done. And I really hardly think it worth her while to have the vagina made patulous again; for while her husband is still living they have both already entered the declining years, and there is enough of the lower part of the vagina left to satisfy the small needs of copulation which people of this age usually have. So I think it is extremely doubtful whether any plastic operation will be done. But were she a younger woman and there was any necessity for the work, I have got her in first-class condition for it to be a success. So that my belief is, where these deformities have occurred in the child bearing woman, that by the persistent use of the same kind of treatment which you would give in case of trachoma of the eye, through months and even years, if necessary, she can be got into condition so that the flaps would unite and any plastic operation would be successful.

In closing this paper there are just two points that I wish to lay special stress on. The first is the persistence and stubbornness with which you must follow up this disease. The old oculists used to say it took five years to cure a case of trachoma, and my experience has shown

that gynæcological trachoma is liable to the same kind of relapses, and we must stick to it persistently until the last vestige of redness about the mouth of the urethra and the carunculæ myrtiformes is gone. Another thing that you must remember is that you can not clean the vagina thoroughly without a speculum. Consequently, the patient can not do all herself. A douche is a very good assistant, but it does not do thorough work, and there is nothing for it but to use a good speculum, with the exposure of the whole surface, and clean it thoroughly with peroxide of hydrogen or any other equally bland and thorough disinfectant, and then yourself rub this yellow oxide into every crypt and fold where the disease still persists. In the early stages this should be done at least twice a week. After you have it under control, though, two or three times a month is all that is necessary. The other point is to watch the muscular spasm. By this persistent care and attention I have made two women, who had had no intercourse for several years before I saw them, perfectly satisfactory wives, whose husbands now tell me that there is no trouble whatever and that they would never know there had been anything unusual about them. The rest are single.

In closing, I can only express the wish that the Fellows of this Society will watch these cases with reference to these last two points, for it is my belief that at last we have the key with which to unlock one of the problems by which we have heretofore been baffled.

CONSERVATIVE SURGICAL TREATMENT OF PARA- AND PERI-UTERINE SEPTIC DISEASES.*

BY FERNAND HENROTIN, M. D.,

Professor of Gynæcology, Chicago Polyclinic ;

Surgeon of the Alexian Brothers Hospital ; Consulting Gynæcologist, St Joseph's Hospital ;

Member of the American Gynæcological Society, etc.

The American Gynæcological Society is composed of experts who convene at regular intervals to discuss in a broad, dignified, and liberal spirit, various vital and important questions pertaining to the development of that branch of medicine in which they are especially interested. In most gynæcological societies the mere mention of the

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word "conservative" brings protests from all the ten-minute laparotomists—suggestions of radical work being just as certain to stimulate the most energetic expressions from general surgeons concerning the extreme views of the specialists. Without taking into consideration the dissenting views of the timid general practitioner of limited judgment, the exclamations of the two above-described gentlemen are becoming very fatiguing. The man of sense and conscience "who comes to town to stay" will be found all along the line as circumstances demand and as reason dictates. He who serves his patients best will reap gratitude at present and reverence in future.

Cœliotomy and removal of the uterine appendages as indiscriminately applied in the past is a most unsatisfactory operation. In spite of the great work and valuable lessons of the Taits and the Prices of both hemispheres, the short incision and the radical excision must fall back where they belong—to the selected cases where they fulfill the indications, and which we now know are not so numerous as formerly imagined, for we have come to realize that in many cases the operation was too much, and in many not enough. The woman of to-day insists not only upon having a radical operation done successfully, but she also expects to be cured of her disease, with its accompanying pains, aches, and discharges. The surgeon of exclusively great experience is positively not the best guide as regards operative indications. His dictum concerning technique and immediate results is invaluable; whether he cures his patients of their diseases he seldom knows. The reason of this is evident. He does not practice medicine or surgery in the ordinary sense of the word. He reigns supreme over a college amphitheatre with its adjunct hospital, or he manages a large private sanitarium. Patients are sent to him by physicians who have learned of his great ability, and after a few weeks he sends them back cured of the operation, but frequently uncured of the disease. The doctor of one laparotomy always knows the result, both immediate and remote. A surgeon—of I should judge about three hundred laparotomies—in a discussion on this subject, mentioned that his results had been very satisfactory, that he did not have more than a dozen women who occasionally wrote to him concerning bad symptoms of pain or discharge. How deceptive! Probably twice as many were writing or visiting some other surgeon, while a much greater number were at home nursing alike their sufferings and their loss of faith in the medical profession, and wishing their ovaries back.

This picture is a true one. A very reasonable proportion of my

patients are complaining to me and a reasonable proportion of yours also, while you are listening to the same complaints, and quite an army are suffering in silence.

Salpingectomy, salpingo-oöphorectomy and oöphorectomy frequently fail to cure patients with peri- and para-uterine septic disease. Hysterectomy has of late years been found efficient in curing many cases that were still suffering after the first-mentioned operations had been performed. The impropriety of leaving behind frequently the chief offender among the pelvic organs has become evident, and a great step has therefore been made in the cure of these disorders. The amount of sentiment wasted upon the emasculated uterus, as Dr. Polk calls it, has always seemed ridiculous. Under such conditions, it is simply a cloaca for the origin of hæmorrhage, the accumulation of discharges, and the development of malignancy. Whether done abdominally or vaginally, this operation has a great future, and in spite of opposition has made wonderful strides because of the thoroughness of its curative effects. In this country it is only a few years since it has been performed with deliberate intent, and all its indications in view. It had originally been performed in an emergency, as a matter of expediency, when the destructive process made it almost a necessity. Péan guided by his great surgical genius, first performed it, in his anxiety to cure a patient who had remained uncured after a salpingo-oöphorectomy. To-day it is an established procedure, and the position of advanced, observant gynecologists, who are not hampered by tradition or custom, or afraid of their own stubborn, dogmatic expressions in the past, can be stated as follows: "In every operation for septic diseases of the female generative organs which demands the removal of the tubes and ovaries, hysterectomy should also be performed, unless there are plain contra-indications forbidding it." This means that this operation which ten or fifteen years ago was never done, which five years ago was rarely, and three years ago only exceptionally done, now, should be the rule. It does not mean more mortality, and it does mean more perfect and complete cure. After you have laid violent hands upon the ovaries, it matters not what becomes of the uterus. This tragic cry that an organ should never be removed without cause is all nonsense, in view of the fact that it has been proved innumerable times to be an element of mischief. This is true conservative surgical treatment in pelvic septic diseases.

But, gentlemen, before you touch the ovaries, then is the time for the display of your sentiment.

Whatever men may say, women do recover from salpingitis and pyosalpinx, from ovaritis, peri-ovaritis and ovarian abscess, from cellulitis and phlegmon of the broad ligament, whether these be of the catarrhal, puerperal, or gonorrhœal variety.

And they sometimes recover entirely and completely, so that this contingency, even if infrequent, must always be considered in forming surgical conclusions. Where surgical measures are considered proper and advisable, much depends upon the character and malignancy of the infectious material and the stage of the disease and amount of destructive process already present.

Having expressed the opinion that total ablation of the internal genitals of women in some cases presents the highest type of conservative work in the fact that it saves life and suffering, I beg leave to present for your judgment the result of some work I have done in the line of conservative surgical measures on the old lines of vaginal section. I will not weary you with extracts from the history of vaginal sections and punctures, written since time immemorial. What I have done is neither original nor a revival of the teachings of forgotten masters.

Pus sacs, or serous sacs, or exudated masses have been punctured and incised in all manners and with all variation of instrumentation by surgeons for all times back. We have only to draw your attention to the writings of Laroyenne, Landau, Mundé, and innumerable others. Some have used the exploring needle and a trocar, emptied the cavity of its contents, frequently using irrigation. Others have introduced metrotomes through the trocar. Others, again, have incised directly and largely the septic focus or penetrated these pelvic cavities with different varieties of cautery knives. There is no need of mentioning authorities upon this subject, for the task would be interminable. It means simply that surgeons, recognizing the presence of inclosed septic material, have followed the general surgical rule of emptying, washing, and draining.

Sinclair, Mundé, and others advise free incision of tubes which are adherent to the peritonæum of Douglas' sac, *per vaginam*, subsequently washing out the empty tubes. Shröder has repeatedly employed this method in reaching adherent pyosalpinx. And so with many others, among whom I might mention particularly Reclus, Gusserow, Bouilly, Formento, of New Orleans, Cabot, of Boston, More-Madden, etc. Vuilliet (*Gazette médicale de Paris*, October 29, 1892) says that he has not done hysterectomy or abdominal section in suppurating pelvic disease in two years. In eighteen cases he has adopted Landau's

method without accident, loss, or relapse, usually using a trocar, which, after carefully locating the sac, he plunges into the cavity. If no liquid appears he makes another puncture. He repeats this at the end of ten or twelve days; if the fluid reaccumulates he injects after the second puncture one to two and a half drachms of bichloride solution. If fluid returns after three or four punctures, he then incises and tampons with iodoform gauze, using a knife like a metrotome, slipping it upon the trocar. This is substantially the method described and practiced by Laroyenne and Landau, both of whom have written masterly treatises upon the subject. Laroyenne and Goullioud, his pupil, claim an important place in the treatment of pelvic inflammations for their method, which opens up largely by the vaginal route parametric chronic collections and holds them open until cicatrized. Their method applies to the diverse fluid collections in the pelvis, tubal dilatations, serous or purulent effusions in Douglas' sac, retro-uterine hæmatoceles, parametric abscesses, etc. It suffices, they say, that the collection, large or small, should be clearly perceptible to bimanual palpation and be an inflammatory mass. It is not necessary to get fluctuation, which in the pelvis is difficult to make out. The immediate result is considerable ease, and eventually complete cure even in multiple pus foci. Distant results, they report, have been almost constantly satisfactory. Noticeable in this is the length of time in which note is made of the patient's condition. Laroyenne records in regard to ulterior condition all the cases which have been seen at least eighteen months after operation. Four women who had been operated upon afterward conceived and bore children.

Ablation of the annexæ remains as an ultimate resource in case pain continues; then it is simply salpingo-oöphorectomy without pus.

The greatest recommendation of the operations of these various men is its lack of danger. Goullioud gives a series of seventy cases, with one death occurring twenty-eight days after operating, due to an abdominal rupture of an unexplored pyosalpinx. He eventually reports another series of sixty cases, with one death, due to secondary operation for artificial anus, the patient having afterward been operated upon abdominally, and a fæcal fistula remaining.

Edmund Blanc, another pupil of Laroyenne, publishes a series of twenty-seven cases of chronic peri-uterine inflammation with serous, hæmorrhagic, or purulent effusions. Many others, however, speak of the danger of these incisions and punctures, particularly the danger wounding the ureters or the uterine arteries. Hoffmeier speaks of

these dangers, and says it is necessary to use sharp or puncturing instruments; also mentions the difficulties encountered when one can not exactly locate the pus sac.

There is no further need of multiplying these quotations, for not only does literature abound with them, but it is a subject with which you are all familiar, and the procedure is one which you all, at one time or another, have employed. Nevertheless, it seems desirable that in this age of wholesale ablations these simpler and often successful minor methods should not be lost sight of. Personally, I have frequently drained pus collections in the pelvis through the vagina, these pus collections being the result of chronic inflammatory conditions. It seems only reasonable to suppose that such operations may be successful, even in the most chronic forms of pyosalpinx. What happens in such cases? Septic material traveling up the Fallopian tube, when the process is not too rapid, finds itself arrested at the abdominal opening by a closure of the *ostium abdominalis*. An abscess cavity is developed in the walls of the tube proper. After a time the uterine end becomes closed, and then we have an independent pus sac, not communicating with either the serous or the uterine cavity. This may rupture into the folds of the broad ligament and work its way toward the vagina. If widely opened and drained and packed, after a time all the so-called pyogenic lining membrane disappears, granulations fill the gap, the Fallopian tube becomes obsolete, and the patient is cured.

One of the reasons of failure of many men in the past is due to forgetting to pay the proper attention to the condition of the adjoining uterus, this organ being left unattended to and frequently giving rise to further trouble. I do not mean to propose, as some most enthusiastic followers of these various measures have done, the employment of this vaginal incision as a substitute for more radical and complete work, but I am simply endeavoring to impress you with the absolute necessity of discrimination, and, with that intent, I quote the success some that others have attained in curing even the most serious forms of trouble by conservative measures.

In treating chronic cases of inflammatory septic disease it is necessary to make sure that a patient is incurable by milder measures before resorting to the radical operations.

In the first part of this paper I have drawn your attention to the fact that many patients were cured of the operation while not cured of the disease, and that only the most complete ablations will suffice to cure some patients. But while we may, in the present state of our

knowledge, be obliged to resort to the most serious radical operations to cure the patients entirely and properly, our minds should be constantly alert for the purpose of discovering methods by which the severer operations may be made available. The difficulty of understanding and analyzing pelvic inflammatory diseases becomes self-evident when we contemplate the many varieties of forms which the disease may take. A simple so-called catarrhal invasion of slow progress following the mucous channels may result in a chronic hyperplasia, sclerosed condition of the uterus, tubes, and ovaries, producing a most serious deterioration of health, and yet giving but very moderate evidence of its seriousness locally. Lymphangitis or phlebitis may bring about suppuration in almost any of the pelvic organs, or any part of these organs, giving rise to the most diverse and complex conditions. These inflammatory foci may cause fluid accumulations of a serous, hæmorrhagic, or purulent variety, or it may be only fibrinoplastic exudate, producing the most perplexing variety of symptoms and the most obscure localization.

The gynæcologist of the future who has a conscience must learn to carefully discriminate between cases. This whole subject will soon have to be gone over again by some master possessing practical experience and knowledge of the past, combined with an advanced special pathologic understanding. The day will come when it will not do to say "Take it out" or "Leave it alone" simply, but when, having found a proper curative method for each variety of case, or for each stage of the different varieties, the application of the remedy will correspond in the most exact manner to the particular conditions existing. Our concentrated attention should especially be turned toward the management of septic troubles in their incipiency. It is a part of the subject very improperly understood and presenting many difficulties. Patients, as a rule, depend for their care upon the general practitioner in the first stages of the disease. However competent and conscientious the gentleman may be, the multitudinous variety of his work makes it well-nigh impossible for him to devote special attention to this particular branch.

The time to cure septic inflammatory diseases—that is, to cure them completely and perfectly—is within the first few weeks of their appearance. We all know that a few days may bring about such a change in the pelvic structure of woman that a lifetime of careful, conscientious treatment, by the most competent of specialists, will not eradicate.

What means have we at our command this day to control or cure

an invasion of septic material, either in the uterine cavity, or in the tube, or in the cellular tissue of the pelvis, or on the serous lining of the peritonæum? Mr. A., of New York, says dilate, curette, and pack at once, or the disease will be beyond your reach. Mr. B., of Philadelphia, says, Do not curette or do not pack, because you will bring about the most serious varieties of pelvic suppuration, for have I not noticed that all my abdominal sections have formerly been curetted? therefore curetting produces pyosalpinx, etc. Then Mr. C., of Baltimore, says, Curette and do not pack; and Mr. D., of Washington, says, Use hot douches, and never enter the uterine cavity, but keep the parts clean and at rest, and your patient will recover. What a chaos! The instrumentation of the uterine cavity, which in the hands of some apparently controls—cures the disease—becomes in the hands of others agents of destruction. An honest statement of facts must lead to the acknowledgment that many women suffer more from the doctor than the disease. Personally, I do not doubt that another decade will dispel many of the shadows hovering over the treatment of various stages of acute inflammatory affections of women. One of the most distressing experiences of the past has been the difficulty of preventing the disease from invading extra-uterine localities. A septic endometritis will affect the tubes, or the peritoneal cavity, or the parametric spaces, or the ovary, in spite of our most enlightened endeavors to control it. Once the disease has reached this point, with many men, no available means of treatment seems useful. Unfortunate women seem doomed to patiently wait for the surgeon's knife, dallying with the hot douche and the warm poultice, if the difficulty seems so acute that curettage is inadvisable or seems dangerous.

Allow me, with the object in view of endeavoring to fill this unfortunate gap in the treatment of inflammatory affections of women, to suggest for your consideration a method which has given me very satisfactory results in the treatment of acute inflammatory affections the last two or three years. Unfortunately, the number of cases is not sufficiently large to form a foundation for a very positive opinion, or the details explicit enough to lead to an analysis sufficient for differentiation. I can not state the procedure more definitely or plainly than by saying that for the last two or three years, whenever pelvic disease gave evidence of having penetrated beyond the cavity of the uterus, I have habitually made it a practice to make an incision behind the uterus, and digitally exploring the pelvis. However crude may be this explanation of the procedure, I am perfectly convinced of its great value. The vaginal incision, in the manner indicated, carries

with it but little, if any danger. I have already pointed out to you how little risk there is encountered in puncturing or incising more or less chronic pelvic accumulations of a morbid kind by this route. In acute and early cases I have had occasion to operate within the last three years upon twenty-seven women, all of whom have made a satisfactory and, apparently, permanent recovery. This, however, represents such a small number, with so little experience, that deductions are only to be made with a great deal of circumspection. When an infection travels by way of the lymphatics into the broad ligament and produces what is known as a "phlegmon" of the broad ligament, its march is frequently excessively rapid, and a swelling occurs on one side or the other of the uterus, characteristic of these forms of disorders; or it may be that the infectious material travels by another lymphatic route, affecting the ovary only. Dr. William R. Pryor (*American Journal of Obstetrics*, July, 1893) thinks that there are two sets of uterine lymphatics—one surrounding the surface and extending laterally into the parametric spaces along the border of the broad ligament, the other following the course of the ovarian arteries, along the other margin of the broad ligament, and having their origin in a network surrounding the corpora lutea. Clinically, according to my experience, this seems to be true, for repeatedly have I been able between the folds of the broad ligament to enter into and drain ovarian abscesses, other parts seeming apparently healthy.

The difficulty in presenting this matter to you properly seems to lie in the impossibility of differentiating the exact locality drained in each instance. Sometimes the finger penetrates posteriorly, apparently through the broad ligament, and separation of plastic exudate, lying between intestinal folds, is evident, showing the disease, in these instances, to have been a true peritonitis, the draining of which seems to be followed by amelioration. For many years I have followed but one rule in draining these cavities within the pelvis; this was, making an incision moderately circular, close to or rather slightly on the posterior surface of the cervix, and dissecting back the vaginal mucosa through the cellular tissue, to a point beyond which the wounding of the uterine artery seems improbable.

This incision never extends beyond the outer limits of the cervix. When, in dissecting back, through the connective tissue, closely hugging the posterior wall of the uterus, sufficient room is not gained, a perpendicular incision, beginning at the middle of the posterior border of the first, and running downward, parallel to the vagina, in the median rhapshe, is made, taking care not to penetrate sufficiently deep

to wound the rectum beneath. With the exception of an occasional slight nick with the points of curved scissors, the finger is used exclusively in the manipulation. The disengaged hand being now placed upon the abdomen, the operator is to proceed the same way as in making bimanual palpation, and gradually penetrate the tissues in the direction of the center of the affected region. If the exudative mass is situated at one side or the other, the finger penetrates backward until the bimanual sensation indicates that the peritonæum, posteriorly, is almost reached. The finger now being turned to the right or left, as the case may be, and the superimposed hand being shifted to the affected side, there is usually no difficulty in penetrating the septic mass. As soon as the finger within reaches the exudative material, the sense to the touch will be self-evident. In the majority of cases an abscess cavity is found, a fact which is easily determined without withdrawing the finger. As, during these manipulations, the peritoneal cavity may have been accidentally opened, without our knowledge, it is better to retain the finger in the opening leading to abscess, and irrigation of the vagina may be practiced, with the finger still *in situ*, after which iodoform gauze is packed in the vagina, and in the wound proper up to the opening of the abscess; the finger now being withdrawn, the pus is allowed to flow. Slight pressure may be practiced upon the abdominal wall, so as to empty the cavity as thoroughly as possible. The packing is now removed, the vagina once more cleansed, and the finger reintroduced into the abscess cavity a second time. Now comes an important part of the procedure, and that is the thorough exploration of the abscess sac, for the discovery of any additional collections in the neighborhood, each collection being treated in the same manner. The other side is now explored through the same vaginal opening, and, if necessary, the same procedures are here employed. Any hard, inflammatory masses are to be penetrated by the finger, whether they contain pus or otherwise. No instruments are to be used during any stage of the operation, after the vagina and submucous tissues have been incised. All inflammatory foci having been explored and penetrated, every portion of the cavity or cavities is to be carefully packed with iodoform gauze, wrung out in 1-to-3,000 bichloride solution. I have no doubt the packing with plain gauze and sterilized water may answer as well and possibly better. The ends of the gauze strips are to be carefully retained, so that they all protrude in the vagina through the vaginal wound. A little additional packing can frequently be advantageously placed in this vaginal buttonhole, so that it will remain quite distended, allowing a

free drainage. The vagina is now moderately packed with gauze, and the operation is thereby made complete.

In some cases one will find the mass of exudate immediately posterior to the uterus in the median line. This inflammatory enlargement may be extra- or intraperitoneal. It matters not, it must be thoroughly penetrated and drained until it is evident by bimanual touch that the finger has reached its outermost limits. The finger is always, in all cases, to be worked from side to side until one's surgical sense indicates that drainage is more than sufficient. In other cases the finger will come almost at once upon the peritonæum, and the space at one's command, opposite Douglas' sac, may not exceed half an inch; but if the finger now is turned to one side or the other, the layers of the broad ligament may be separated and the finger pushed in large masses at either side without opening into the general cavity; or, again, the finger being pushed to one side when the peritonæum is reached, the parts separated may be felt thin, pliable, and apparently perfectly healthy, until the operator reaches on the posterior wall of the broad ligament a round or oval, soft, thin wall, fluctuating sac, evidently an ovarian abscess. At this stage I have repeatedly had my assistant introduce the finger to palpate the sac wall before penetrating it, and giving an exit to a large amount of pus. In a reasonable number of cases no pus is found, the enlargements consisting entirely of a conglomerate mass of exudate. Particularly is this true of those forms of disease which are apparently intraperitoneal. Personally, I believe it makes but little difference in the result if the general cavity of the peritonæum is opened. A number of times, I am convinced that such was the case in my patients, but not the least reaction followed. In one instance, in a patient operated upon by a colleague, after this method, I pulled down a presenting portion of omentum to make certain of the fact, the patient recovering the same as the others. The packing is not removed for three, four, or five days, unless the patient's general condition indicates a retention of secretions. The wound may be kept open by a replacement of the packing three or four times, several days apart, but it has been my custom after eight or nine days, if the patient's condition is favorable, to simply use vaginal douches, taking care that the vagina is kept as aseptic as possible. No irrigation is to be used at the time of the operation beyond the vagina; but, if the abscess sac is large, it has been our custom to introduce a small tube and irrigate freely after the second or third dressing. The effect of this procedure in some patients is simply magical. The pains, hectic, and distress all dis-

appear, and the patients, in the vast majority of instances, make a rapid recovery.

A uterus that has been retroverted and retroflexed is lifted, in the retro-uterine cases, to a higher plane, and remains after the cure in a much more preferable position. At the end of two to three weeks it often has almost entirely regained its mobility, and an examination of several of these patients a number of months later has seemed to me to leave very little to be desired.

In case the inflammatory affection has encroached upon the anterior vesico-uterine cellular pouch, bounded externally by the round ligaments, the same procedure can be used, making the incision in these instances anterior to the cervix and dissecting back between the uterus and bladder until the inflammatory center has been drained.

Allow me to give you a striking illustration of the value of this method. Four years ago a young girl, fourteen years of age, who had apparently had several attacks of appendicitis, developed a pelvic inflammatory affection which resulted in complete fixation of all the organs, the filling of the whole pelvis with large exudative masses, and resulting, after intense suffering and four months of critical illness, in an abscess, which, fortunately, made its escape by way of the rectum. After remaining well for a year and a half she suddenly developed another acute attack of the same variety. I had failed to examine her in the interval between these attacks, so that I can not tell how far and completely she recovered, though she was apparently in perfect health. This, then, was a second attack, coming in a girl in apparent health, and ushered in by the most serious symptoms of rigors, fever, painful micturition, and painful defecation. Alarmed at the possibility of her having to go through the same ordeal as in the former instance, when her life was in such jeopardy, with the consent of her parents I immediately performed *cœliotomy*, intending, if possible, to abort the threatened destructive process, and, if necessary, remove the offending organs. The condition of the parts forbade further operative procedures by way of the abdomen. The uterus, ovaries, tubes, and all parts concerned, were absolutely fused into one conglomerate mass, which meant that, in a girl of sixteen, I would be obliged to do a complete ablation, with the greatest danger to her life, and the blighting of her future. Closing my abdominal incision, I put her upon her back, and through the little narrow vagina I incised the vaginal roof close to the cervix, anteriorly and posteriorly, penetrated both broad ligaments to their outermost limits, as well as the utero-vesical space, packing, as aforementioned, with

gauze. No pus was encountered, but the disease was stayed. I examined this girl four weeks ago. She had been ill in bed only four weeks following the operation, and has now been fifteen months in perfect health. Her uterus is movable, though not to the same degree as you might expect in a perfectly healthy girl; but there is no thickening and no enlargement, and no appearance of disease.

For many years I have opened pelvic abscesses in this manner, never making use of any instruments beyond the first incision and a few nicks of the scissors in the second layer. Making the incision closely upon the cervix, adding to it the secondary incision at right angles down the vagina, if necessary, prevents hæmorrhage from the vaginal vessels. Once having reached the cellular spaces, the finger can be guided inward within the pelvis. It is, to me, infinitely safer, and to be preferred to various methods of trocar puncturing, needle exploration, and cautery knives. It is simplicity itself, and requires only a few minutes for its performance. But this matter of opening abscesses is an old, old story. It is the application of this method of treatment for the cure of inflammatory pelvic affections in their very incipency.

Allow me to describe in a few short words my last case, as it represents a perfect type of the value of this method:

A young woman having forgotten herself, and being two days past her expected menstrual time, resorted to the services of an abortionist for the destruction of a supposed pregnancy, which, however, did not exist. Following the introduction of some instrument into the uterus, she suffered for two days very intense pain, accompanied by some fever. She was not, however, confined to her bed. The desired menstruation not making its appearance, at the end of six days she returned to the man's office, and a second instrumentation was followed in thirty-six hours by a severe chill, high fever, and excessive pelvic pain. On the sixth day of her illness I saw her in consultation, finding an inflammatory swelling to the left of the uterus in the broad ligaments. On the seventh day, under ether, I made the posterior vaginal buttonhole, penetrated the tissues with my left forefinger, and opened an ovarian abscess containing fully four ounces of pus. Eighteen days later this woman walked two blocks to the street cars and rode home. Her uterus was almost entirely movable; there was no apparent discharge; the woman was, to all appearances, cured.

Bear in mind the salient points of such history; refer back to cases of that variety which you have seen linger for months in bed, afterward returning for a laparotomy and an ablation of the append-

ages. Remember that this woman was sick only seven days, and yet a good four ounces of pus were found in her pelvis, and at the end of three weeks she returned home apparently cured—that is, physiologically, symptomatically, and, to all appearances, entirely cured.

It is not only the application of the old surgical principle to evacuate pus as early as recognized, but this operation strives to go further. It shows to us that, pus or no pus, the character of exudative material of the variety that is usually found in the pelvis is susceptible of absorption when broken up and drained. In some way, as happens within the peritoneal cavity when a drain is introduced, septic material from within seems to be drawn toward the breach that has been made, and if sufficient outlet has been provided, and if the parts are kept sufficiently aseptic to prevent mixed forms of infection at that site, the bacteria are usually destroyed and expelled, the exudative material is replaced by granulating tissue, and a cure results. No matter what success a man may have as a skillful enucleator of large and old pus sacs, he must indeed be bold who would deny the advantages of an early incision through the vagina if it can be followed by such good results as are apparently shown by cases as they have come to my notice. The objections that hold good against the vaginal incision in old pyosalpinx and other cavities which have destroyed, to a great extent, the organs in which they originate, have but little weight when applied to the procedure which I advocate. We are here simply incising, irrigating, draining localities permeated with recent lymph. The more I see of this work the more I have reason to believe that it is of value, and probably it will soon be determined that the earlier the operation is done the more striking its benefits. It is a question with me whether it will not be recognized in the future that an incision in the Douglas sac, performed at the very incipiency of a pelvic peritonitis, establishing a drainage for the primary serous effusion that occurs, will not prove an invaluable means of aborting and controlling these nefarious processes. It means the elimination of the noxious material as soon as it becomes palpable.

I had almost forgotten to say that in every single instance when this operation is performed the uterus is to be carefully, thoroughly, and intelligently curetted. Failure to cure incipient septic disease of women arises most frequently from an inability to exactly locate and reach the exact seat of the affection. If a woman suffers from an endometritis, pure and simple, she can be cured by an intelligent and thorough curetting, if every vestige of the diseased tissue can be reached and removed. Here we have facing us the frequent inability

to reach the cornua of the uterus, at the opening of the Fallopian tubes. In some cases, without our knowledge, the disease has already encroached upon the tubes themselves, and, to a certain extent, beyond our reach. In other varieties, some of which also we are not able to diagnosticate, the virulent micro-organisms have penetrated through some of the aforementioned channels, beyond the uterine body, in one or the other direction, and my contribution to your understanding of this subject is an attempt to point out another method of combating these unfortunate affections, according to reasonable indications. The demonstration of the value of my suggestions will probably fall within the province of the consulting man, whose practice brings him face to face with these diseases in the first part of their course. The great hospital operator will probably see but few of these cases at a sufficiently early stage to verify the value of the proceeding. It has seemed to me to be a most valuable adjunct in the treatment of the septic diseases of women, and is presented to you with the hope that it may become a respectable addition to the methods in vogue for the conservative surgical treatment of these affections.

353 LA SALLE AVENUE.

THE ULTIMATE RESULTS OF TRACHELORRHAPHY.*

BY WILLIS E. FORD, M. D., UTICA, N. Y.

The necessity for a surgical operation depends many times upon anatomical considerations, though minor gynæcological operations are often elective and are advised because the after-history of other patients similarly treated justifies it, and not because there is danger to life. The opinion as to whether a procedure is to be advocated or not, sometimes depends upon the point of view taken by the operator. Thus those gynæcologists who have been developed from general surgeons may differ widely from those who have been general practitioners, or who have been interested in some special branch of medicine.

Trachelorrhaphy has thus been discussed from many points of

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view until it is a threadbare subject, and yet the widest difference exists both in the theory and practice of gynæcologists to-day regarding it. My early training in nervous diseases has naturally made me seriously consider the nervous condition of women, while in later years devoting my time to gynæcology, and I shall therefore in this short paper refer only to the results of trachelorrhaphy on nervous disorders.

Living in a small city, I observe the post-operative condition of women, and am able to continue the clinical observation of a larger proportion of those operated upon than a metropolitan surgeon can hope to do. This personal observation of a large number of cases, many for years after a trachelorrhaphy has been done, has led me to conclusions which I venture to present here.

Much has been said about the reflex nervous disturbance produced by tears both great and small in the neck of the womb, and the operation has been advised because of this, though I confess I could never see any justification for the use of the term reflex pain or reflex nervous disturbance.

A mass of cicatricial tissue at the bottom of an old laceration may and does so interfere with the normal circulation of the parts that congestion and actual enlargement of the uterus occurs, and pain comes as the result, or an inflammatory condition remaining for a long time may start a neuritis, which gives continual tenderness and pain in the pelvis.

I have not seen this produce loss of inhibitory power of the cord which gives true reflex explosion. It can not be said that pain or other continuous symptoms in remote parts of the body are due to reflex influences. Mere transference of pain is not of a reflex nature. Continual irritation of an afferent nerve may so disturb the ganglionic center that after a time the inhibitory power is lessened or overcome and an explosion takes place along some other nerve leading from this center. This is always, however, spasmodic, temporary and transient, like all other normal reflexes.

Neurasthenic women have pain and uncomfortable sensations in many parts of the body though not all the organs are diseased. And again neurasthenic women have sometimes considerable pelvic disease, indeed this may have caused the neurasthenia, and yet they get well without operation.

What has always seemed more strange is the fact that women with uterine disorders—say cervical lacerations and the accompanying metritis, having perhaps hæmorrhages to such an extent that the

general health is undermined, and the mental inhibition, if one may use such a term, being lost, the patient becomes insane, even then they recover from the insanity without uterine treatment, and more speedily, I believe, than they do with it.

The reason for this latter fact probably is that it is not wise to disturb the emotions or to divert the attention of unbalanced minds to organs which are so frequently the seat of perverted sensations. The physical basis of all disease is so thoroughly rooted in our minds that the removal of the cause seems a necessity. Cervical laceration is only an indirect cause, and if we exclude the term reflex neurosis or reflex pain, as I am sure we must, we shall have to say that a nervous disorder is made better by trachelorrhaphy only because it improves the general health. All of this is outside the general question as to the amount of nervousness based on mental apprehension, because it is known there is something wrong with the womb. And again, the mental effect of an operation *per se* can not be considered here, though many neurasthenics are undoubtedly benefited by it as by the faith cure.

There is, on the other hand, a large number of cases that are made worse mentally by an operation of any kind, because having escaped death from an operation and not having suffered pain, the overwrought mind morbidly turns to surgery for relief of every uncomfortable sensation.

Much discredit has also been thrown upon this justifiable and in many cases necessary operation because of the promise of relief to nervous symptoms, a promise not justified by the facts. Instances are by no means rare in which surgeons are importuned to do operations that would not only be useless, but would be hazardous without the prospect of any advantage to the patient. It is quite probable that trachelorrhaphy ranks first among operations that are done without any benefit to the patient, and at the same time one may truthfully say no operation in proper cases affords so much relief with so little risk and discomfort to the patient.

For instance, during the past year four of my clients, whom I had some years ago delivered of children without accident or injury, became nervous and out of health; in two of the cases from an unreasonable amount of social duty and pleasure, and in the other two from the care of large households, combined with long illness of members of the family.

All consulted me regarding the necessity for the operation of trachelorrhaphy. These women, being intelligent and cultivated,

had been told of the slight rent in the neck of the womb at the time, and I had kept them in bed for a longer period than is usual, and they got up well. Long afterward, when out of health, they heard of some friends who had been operated upon, and at once became impressed with the necessity for a trachelorrhaphy. I declined to operate, and two of the cases went away and were operated. One was sewed up so tight that the cervix had to be thoroughly divulsed after coming home, and the other woman is still as feeble and nervous as before. Two were not operated, and after a time, with very simple treatment, recovered.

This experience perhaps more than anything else caused me to look up my own statistics as to the ultimate results in nervous women. In doing this I have omitted all reference to cases that were uncertain in the surgical result, or were lost sight of, or were done for other physicians and concerning whom I had nothing more to do than to operate. Excluding thus a large number of operations, I have collected one hundred and thirty-six cases of my own that have been carefully observed long enough afterward to be used for statistical purposes. None of these cases were operated upon this year, and a few of them go back to nine years ago.

I have not thought it worth while to classify them as to the time operated because one year is sufficient to get a fair estimate of the result. Neither have I thought it necessary to state whether the tears were unilateral or bilateral, for in my experience this is of less importance than the depth of the tear, and regarding this I may state that slight rents where the membrane has healed and remained sound never seemed to justify an operation.

Of these one hundred and thirty-six cases, sixty did not present any unusual nervous symptoms and the operation was done for the usual condition of ill-health, with pelvic pain caused by erosions of the cervix, metritis, etc. The recovery in all was satisfactory, the restoration to good general health followed, and the ultimate result was all that could be asked for. In the other seventy-six cases there was marked nervous disturbance. That group of symptoms which go to make up the condition known as neurasthenia was what brought the patients to the physician, and it was then discovered that they had deep lacerations with enlarged uterus and erosions, etc.

It is hard to classify symptoms of neurasthenia partly pointing to physical disturbance and partly to mental perturbation. Women in this condition with pelvic disorders have the same symptoms that others have who are free from pelvic disease. The want of energy,

both mental and physical, the emotional disturbance due largely to the acquired habit of yielding to physical discomfort and the apprehension that soon effaces the will, the consequent disturbance of secretions and perversion of nutrition, all combine to make a symmetrical picture of misery.

I carefully repaired the torn cervix in each case and got a good union, keeping the patient in bed for a sufficient time to allow the involution of the uterus to take place. In forty-nine cases the recovery from the nervous symptoms under proper management for a year took place, and in twenty-seven there was no marked change from the operation. In two of these I afterward removed the appendages for actual disease of the ovaries, leaving twenty-five cases uncured after the lapse of more than one year. The percentage of recoveries from a general neurasthenia was not larger, therefore, than one may reasonably expect without operation. This was not due to any failure of the operation itself, and in only the two cases mentioned did I find any appreciable pelvic disturbance afterward.

It would seem that a well-marked nervous disorder which has become established is not removed by an operative procedure which is justifiable, even if it reaches to the original cause of the departure from health.

The fact that none of these cases where marked neurasthenia was present showed much immediate improvement in symptoms after the operation and that a large percentage did not recover after the lapse of a year was disappointing at the time, though the consideration of these statistics that seems to point to a rule has not surprised me.

If it was true that permanent perversion of function of a distant organ could be caused by a peripheral irritation, then the term reflex nervous disturbance as it has been used in gynæcology would be correct and the cures by operation would be certain.

My experience with this operation for the relief of well-marked nervous disorders has not been very different from my experience with oöphorectomy in the same class of cases.

When a local disease or injury is so serious as to impair the general health an operation for its cure gives a brilliant result, but when under the same circumstances a well-marked nervous disorder has come on instead of general ill health the same operation does not promise so much. If the general health is not impaired at all trachelorrhaphy does not materially influence the course of a nervous disease, such as neurasthenia in its various forms, neuralgia in remote organs, epilepsy, hysteria, hysterical aphonia, etc.

The reason for this lies in the fact that these disorders, when once fully established, have a deeper cause than any peripheral irritation, no matter how continuous or how severe. It is better to recognize this fact than to promise for trachelorrhaphy or oöphorectomy more than these operations can be reasonably expected to accomplish.

THE SYMPHYSEOTOMIES OF THE UNITED STATES AND OF CANADA.*

BY ROBERT P. HARRIS, A. M., M. D., PHILADELPHIA,

Honorary Fellow of the American Gynæcological Society.

It will surprise many to find that symphyseotomy in America dates back fifteen years, and that it was performed with entire success in Texas in 1880, in which year there were but six operations in the world, one third of them proving fatal to the women. Of these six cases, only one was operated upon out of Naples, and this was in Denison, Texas, under Dr. Joel O. Williams, now a country surgeon of William Penn, Washington County, in that State.

Dr. Williams was at that time in the commencement of his career as a physician, and was called upon to deliver a *single* girl of thirteen, the birth of whose child under the circumstances he promised to keep a secret. Finding the girl's pelvis small and the foetal head large, and failing to deliver with the forceps, it occurred to him that he could gain pelvic space by separating the symphysis pubis, which he had seen cut through as a matter of curiosity by an associate in a Cincinnati dissecting-room.

Dr. Williams was a student of the Miami College from Kentucky, and knew nothing of symphyseotomy, which was not lectured upon; neither did his obstetric text-book mention it as a scheme of delivery. He had not heard of Sigault or of the revival of his method under Profs. Morisani and Novi in Naples. Getting his medical education under close economy, he had no advantages other than those afforded by the college lectures and the few books he was obliged to purchase. His operation, in so far as he was concerned, was an original idea be-

* Read before the American Gynæcological Society, May 30, 1895.

gotten under the necessity of the moment, and was performed with a tenotomy knife, which enabled him to deliver a twelve-pound male foetus with the forceps under a pubic separation which admitted of his forcing in the tissues of the mons veneris with the ends of the fingers.

As the operator was forced to do his work without assistance, it will be of interest to repeat what he wrote in a letter to me more than a year ago, in which he described the method adopted. The girl being brought under the influence of chloroform and placed partly on her left side, "I flexed the right leg strongly upon the thigh, and the thigh upon the abdomen, and sat down upon the edge of the bed in such a manner as to retain her leg in the above position. My right arm and hand were between her two legs; her right leg was retained in a flexed state by my left shoulder and breast, my left arm being passed under her right thigh and the hand used to depress the clitoris. In my right hand I carried a Tiemann tenotomy knife; I passed the point through the tissue just over the inferior margin of the joint, and, directing it upward, carried it in that direction. I then set free the clitoris and took hold of the pubic hair, by which I sustained the dermal pubic covering from the point of the knife, and after some effort discovered that the blade was evidently in the symphysis. I then used both hands in directing the knife, so as to prevent any slip or awkward cut being made. The bones were separated, and when I felt them yield I withdrew the knife and set the legs apart." I think the girl may have been conscious when I delivered the child by the forceps.

Dr. Williams is broad shouldered and strongly built, which enabled him to hold the girl while he operated; the women of the household absented themselves, being too much frightened to be of any assistance. It was not intentional that he was without a consultant, as he sent for a prominent physician in the night, and the messenger returned with a report that he was not at home. This was an error, as the books of the physician have since shown, and it is now thought by Dr. Williams that the messenger gave a false report designedly so as to compel him to be alone in the secret. This secret was kept so securely for nearly fourteen years that no physician ever heard of the case during that period either in Denison or elsewhere. The girl recovered, the boy lived, the mother married and removed, and Dr. Williams settled in his present location more than twelve years ago. Here in 1884 and in 1889 he performed a second and a third symphyseotomy before any one in America operated.

I first heard of these operations in February, 1894, and at once

took steps to ascertain whether Dr. Williams' statements were to be credited or not. I wrote to physicians in Denison and its vicinity and found they knew nothing of his first case, and never having heard of it did not hesitate to brand the report as a fabrication and its author as entirely unreliable. If I could have furnished them as they proposed with the name of the family or the number of their house and name of the street, they would no doubt have traced up the whole case and the subsequent history of the girl. But this, Dr. Williams did not feel in conscience that he had any right to do, so he endured their charges rather than fail in his professional obligations to his young patient, who he presumed might have married in the meantime and become the mother of other children.

I opened a correspondence with Dr. Williams on February 28, 1894, which has been kept up to the present time, and on March 2d of the same year sent him a blank table for the three cases, which he filled up and returned with the points presented at the head of my tabular record.

Finding all of Dr. Williams' statements discredited because of the doubts regarding the Denison case, I secured the preparation of affidavits taken before Court, which settled his veracity as to Cases II and III, and rendered it highly probable that he had told the truth as to the case secretly operated upon in Denison at an earlier period. This is the view taken in a letter to me by a prominent physician in Denison, who expressed his pleasure at finding that the pioneer symphyseotomy of America belonged to the credit of Texas.

Having proved the performance of operations two and three, the next step was to search for and find the subject of the first operation, who had not been heard of for several years, although believed to be still alive. This search had to be made with much care and tact, so as not in any way to make known the early history of the woman. After some months, she was traced to a leading city in the far South, where she occupied a good social position as a wife and mother. As her pelvis had developed with mature years, she was able to give birth naturally to several children. The symphyseotomy boy is well grown, and was fifteen years old on April 29th ult.

In the second operation of Dr. Williams, an incision was made at the top of the symphysis, of an inch and a half in length, and the separation was effected by carrying a curved probe-pointed bistoury behind the joint and cutting from within outward. In this case there was less pubic separation than in the first, and the fœtal head was thought somewhat enlarged by hydrocephalus, as shown by the dis-

charge of an extra amount of fluid under perforation. The computation of two and three eighth inches for the *conjugata vera* must have been an error, as the woman delivered herself of a living male foetus twenty-six and a half months later. The patient and boy now live in northern Georgia, where she gave her affidavit. I have her full-length photograph, taken quite recently in Covington, Ga.

Dr. Williams' third operation was upon a colored woman far advanced in Bright's disease, and having a contracted pelvis. The pubic bones separated two inches, and the child, strange to say, lived a year, although the mother died of uræmia in sixty hours. The doctor was assisted by a farmer who had studied medicine a year, and then gave it up; he gave an affidavit in Court as to the method of delivery.

It is the height of folly in any one to try to make out Dr. Williams a fabricator of his cases. The physicians of Denison doubted his veracity; but after the receipt of numerous letters during fifteen months, I have not been able to find the least evidence in vindication of their estimate of his character. Certainly the account of his operation in their city reads very little like a romance. Dr. Williams lived a few years in Denison, where he was not thought a surgeon; but the spirit of surgery was in him, and it has developed to a marked degree in the last eight years. He is an original thinker, and has nerve and humanity enough for his work; but shows no anxiety for notoriety, and has not reported some of his most creditable works. I have not been able to find in him the least tendency to departure from the truth, or to distortion of facts; and to question his veracity is an insult to his sense of honor. He is ambitious, but it is in the line of professional improvement, and had he the means, would put himself in a position to perfect his knowledge by observation and study.

Although Dr. Williams, who bears a good name in his section of Texas, was undoubtedly the first to perform a symphyseotomy in America, his having done so was not known to others until after it had been performed forty times by other men, with a saving of thirty-one children and thirty-five women. Thirty-one operators in ten States had reported their cases before Dr. Williams felt that he was at liberty to reveal the particulars of his own secreted work. He therefore had nothing to do with the introduction of the operation and commending it to his medical brethren. The operation was commended and described to the fellows of this Society on September 20, 1892, and in seventeen days, as opportunity favored, there were three women delivered under it, and this number increased to seven with-

out a maternal death in the next three months, although two children died within three days after birth. These seven bore fruit in the multiplication of cases in 1893, when thirty-one operations took place, making the United States the second in point of numbers for that year, as compared with the countries of Europe, the lead being that of Germany, which had six cases more. These thirty-one symphyseotomies lost five women and eight children, a proportion that was somewhat discouraging to its advocates, and gave an excuse for the opposition of others, who were not convinced of its thorough practicability. Since the close of 1893 there have been thirty-three operations, with a mortality of four women and eight children. The operation is still in its infancy in America, and much has yet to be learned, and much more care taken, before the mortality can be reduced to the low percentage of Italy for the last nine years.

General Summary of the Cases in the United States.—We have had seventy-four symphyseotomies in fifteen years, and seventy-one in two years and seven months. There were ten prior to January 1, 1893; thirty-one in the year 1893; twenty-six in 1894; and seven thus far in 1895. The seventy-four operations were the work of forty-four operators, and fifteen of them are fellows of this Society. These fifteen operated thirty-seven times, and lost four women and nine children. Of the seventy-four women ten died, and of the children eighteen were lost. The cases were distributed throughout the United States as follows:

STATES.	Cases.	Women died.	Children lost.
Pennsylvania.....	24	4	6
New York.....	24	2	4
Illinois.....	9	2	1
Texas.....	3	1	1
California.....	2	..	1
Massachusetts.....	2	..	1
Washington.....	2	..	1
New Jersey.....	2	..	1
Louisiana.....	1	1	1
Maryland.....	1	..	1
Maine.....	1	..	..
Ohio.....	1	..	..
Oregon.....	1	..	..
District of Columbia.....	1	..	..
	74	10	18

Causes of Death in the Ten Fatal Cases.—The numbers given refer to the tabular record, in which the causes are not stated. By associating them together, the causes can be better considered and avoided.

CASE III.—Death unavoidable. Subject far advanced in Bright's disease, with kidney action suspended. Death from uræmia in sixty hours. Child lived a year.

CASE XII.—Woman believed to be beyond hope; child still alive, and brow presenting. Opening the symphysis permitted version by the vertex. Woman and child unskillfully treated before removal to the hospital; both died in a few hours.

CASE XVII.—Patient believed to have been infected with sepsis through uncleanly obstetric management prior to the operation; she died of septic peritonitis on the eleventh day.

CASE XIX was intemperate, and is believed to have caught cold on her way to the Maternity when in labor, and exposed to cold and dampness. She died of double pneumonia in seventy-two hours. Two accoucheurs in charge said there were no septic symptoms.

CASE XXIX.—A multipara of forty-two; was three days in labor before going to the Maternity. She died of direct sepsis from the wound behind the symphysis on the eleventh day.

CASE XXXIX was a multipara of forty-three; in labor thirty-six hours, and in bad condition when she entered the hospital. Her vagina was badly torn and œdematous from attempts to deliver before going to the hospital. She had a pulse of 140, and temperature of 102°. Death occurred in twelve hours from shock; she was also septic.

CASE XLIV.—Subject an undeveloped girl of fourteen, living in extreme poverty; was in labor twenty-eight hours, and twenty-two of them under the care of a young physician. She died of septic peritonitis in five days. Child believed to have died under forceps pressure. Hygienic surroundings very bad.

CASE LVI.—Subject was a fat colored multipara believed to weigh two hundred and thirty pounds. She was in labor sixty hours; had a small pelvis and a very large fœtus. Vigorous and prolonged attempts were made to deliver by the forceps before the operation, fracturing, as was afterward found, the os frontis and os occipitis of the fœtus. Operation by direct incision through three inches of fat. Wound healed by first intention; but injuries to the vagina by the forceps resulted in gangrene, of which the woman died on the fifth day.

CASE LXX was in labor at intervals for a week ; but was in a "fairly good condition" when operated on. She died of septic peritonitis on the fourth day, which was attributed to infection through an opening in the anterior vaginal wall.

CASE LXXIV was a primipara of nineteen ; in labor nineteen hours, and in good condition when operated upon. She had a rachitic pelvis, and was delivered by the forceps. Her death was due to septic peritonitis and was said to be a radiation "from the pre-vesical space." She died on the seventh day.

Cases XII, XIX, XXIX, XXXIX, LXX, and LXXIV died in hospital ; and Cases III, XVII, XLIV, and LVI in private practice.

In Cases III, XII, XXXIX, and LVI the prognosis was very unfavorable at the commencement of the operation. In only two cases was the condition of the patient a favorable one for symphyseotomy.

The mortality of the children is one of the drawbacks to symphyseotomy, and with proper care might be much reduced, as it has been, by long experience and thoughtful management in Italy. As it is a substitute for craniotomy, the life of the fœtus should be regarded as one of primary importance. The Cæsarean operation in our country has been very disheartening in its results. It is less fatal to the children than symphyseotomy, but far more fatal to the mothers. There are Maternities in Europe, like those of Leipsic and Dresden, where the Cæsarean section has a very low percentage of death—so much so that it is preferred by certain obstetric surgeons to symphyseotomy. Operators like Zweifel regard both means of delivery with favor, having had good success with each. The danger in symphyseotomy does not lie so much in the pubic section as in injuries produced by the forcible delivery of the fœtus under forceps of unsafe form and adaptation. If the fœtus is known to be dead before the operation, the case is an exceptional one, where the delivery should be by symphyseotomy. Of the eighteen children lost in the United States, four were already dead before the operation ; two were destroyed by craniotomy in preparation for delivery, having hydrocephalus ; four died in delivery, two by version, the head being too large for the pelvis, and two by forceps pressure ; six died on the first day after delivery, some from forceps injury ; and one died on the third day.

The weight of the American fœtus is to be considered in calculating the minimum *conjugata vera* for our operations, and this should not be less than seven centimetres, or two and three quarter inches, because, by a careful calculation, forty-four male fœtuses delivered under

symphyseotomy weighed an average of eight pounds three ounces, and twenty-five females eight pounds one ounce. The Italian minimum of sixty-seven millimetres is too small for the average American baby's head. The biparietal measurements of many that have been delivered show this : viz., three and three quarter inches in eleven cases, four inches in seven, four and an eighth inches in three, four and a quarter inches in four, four and three sixteenths inches in one, and four and five sixteenths inches in one. The largest fœtus weighed fifteen and a half pounds, and was brought through a conjugate of four inches by a pubic separation of four inches ; the urethra and bladder were lacerated and were repaired by suturing. The boy was lost in eight days by a diarrhœa produced by improper feeding (see Case XXXII of table).

The separation of the pubic bones has shown a variation of from one inch to as great as five inches, the ordinary measure being about two inches. The five-inch separation occurred in Case LV, under the care of Prof. Henry J. Garrigues, of New York, who says that it resulted "by the mere weight of the legs, without manual separation." The patient had a soft tumor apparently in the recto-vaginal wall, and a fœtus of ten and three quarter pounds. Three and a half months after the operation, she had a waddling gait, a cystocele, and sometimes pains in the sacro-iliac and pubic symphyses. The symphysis pubis was firm. She was cured by a vaginal hysterectomy and double oöphorectomy. A separation of two inches, or even three inches, is quite compatible with a perfect convalescence and recovery. There is no occasion to suture the bones in the Italian method, as they can be held securely together by bandages and adhesive strips. The dressing for fixation should be unchanged at first, as removing the restraint upon the parts favors the production of a mobile union. Treat the joint as a fracture, and let it be kept as still as possible during the first two weeks.

The Delivery of the Fœtus after Incision.—To permit a woman to deliver herself, as was formerly done in Naples in about one case out of four, has not been the practice in the United States in head presentations, except in two instances. Fifty-four fœtuses were delivered by the forceps, and in eighteen cases podalic version was employed ; one breech case was delivered by the feet. Of thirty-four primiparæ, twenty-four were delivered by the forceps, nine by version, and one by manual aid. Of the children of primiparæ, three were dead before the operation, two more were destroyed by craniotomy, two died under delivery by podalic version, one under the forceps, three died on the first day, and one on the third. Of the forty women

who had borne previously from one child to eleven, two were delivered of children already dead, two children died by forceps injuries, one in delivery, one in six hours, and two died shortly after delivery.

The After-history of Symphysiotomy Cases.—Under the suprapubic section of Morisani, where the tissues covering the symphysis are not incised, as in the French operation, and where stitching can not be employed to keep the bones in apposition, women have, as a rule, made good and rapid recoveries under a proper pelvic fixation. This has been the experience of Neapolitan operators expressed to me in writing, and they have had occasion to operate upon quite a number of women for a second time. Two women now living in Philadelphia, have been the subjects of two operations each, and their convalescence certainly recommends the operation. The records of symphysiotomy of recent years, have set aside the old objection to it, of severe injury done to the sacro-iliac synchondroses. This objection was very tenable in the days of Galbiati, of Naples, but the cases of this form of injury must be very rare now, in properly conducted operations. Opening the symphysis to the extent of three inches has been done with impunity in Naples and elsewhere, so far as these joints are concerned. But this is not the chief element of danger; neither is the claim that the symphysis pubis will not unite firmly, or may be a long time in doing so. The danger lies in the effect that is produced upon the urethra, vagina, and uterus, in the delivery of the fœtus by the forceps, and the forcing open of the symphysis by the passage of its head under traction. The danger of sepsis lies in the torn or injured parts, and these must be at once repaired if it is to be prevented. Sepsis originating in the parts behind the symphysis may be avoided by packing with a tent of iodoform gauze, if there is bleeding, or by a drainage tent simply, if not. There is a very serious connection between the length of labor, prior attempts at delivery, and the fatal issue of a given case. Sepsis may be already established, and the condition of the woman made very critical before the knife is used. We admit that the true place for a symphyseotomy is in a well-conducted Maternity; but for success, the woman must enter before anything has been done, or better still, before labor. Emergency cases received in hospital have added three to their quota of deaths. Thirty-eight women were operated upon in private practice, and thirty-six in hospital, in the United States. Four women died in private practice, and six in hospital. Three children were already dead in the private cases, and two in the hospital. Six children were lost in the private cases, and seven in the hospital. These are

the facts, but they do not make a fair comparison for the Maternity results, especially as regards the deaths of the women.

The Lameness of Patients following Symphyseotomy.—Objectors to this operation make a great deal of capital out of a few cases of ununited symphyses. As there are cases of ununited fracture of long bones, so there will be exceptional ones of ununited symphyses, and an ambling gait, or even an inability to walk. I have not met with a case, but have heard of such, through correspondence. Sometimes there has formed an abscess, and been an exfoliation of a little piece of bone, or of a cartilage. Sometimes the bones have united, so as to admit of a perceptible mobility, but without lameness. One such woman had an alternate motion upward and downward of three eighths of an inch, and gave birth to a second fœtus without an operation; she had a *conjugata vera* of three inches. The worst case known to me was in a syphilitic woman, and took six months to recover. The proportion of cases is very small, and may be made still less by a proper after-treatment.

As lacerations of the cervix uteri, the vagina, urethra and perinæum are some of the consequences of forcible delivery of the fœtus after pubic section in primiparæ, the form of instrument and its mode of application are important. The axis-traction forceps as originally devised by Tarnier, with its Davis blades, oval fenestræ, and beveled edges, was an innocent instrument compared to many of its modifications, having the older kite shaped fenestræ. If the Davis blade is applied over the parietal protuberances, it will occupy but little space, and should not of itself injure either child or mother. If there is too great a disproportion between the fœtal head and pelvis, the soft parts may be injured by the head itself. The capabilities of the forceps for doing injury appear to have been demonstrated to such a degree in Vienna as to have reacted against symphyseotomy, and in favor of the Cæsarean section. The form of forceps in use in the Krankenhaus must be largely at fault. Our own operators should be particularly cautious, in view of the fact that American women produce larger fœtuses on the average than European women do.

My paper will hardly be complete without a statement concerning the extension and increase of symphyseotomy throughout the world. In 1891, the operation was entirely confined to Naples, which in that year had twelve cases, saving all the women and ten children. In 1892, it increased more than seven times, and was performed in twelve countries besides Italy. One death in eight and a half cases in 1892, and one in eight and two ninths cases in 1893.

SYMPHYSEOTOMIES OF 1892.				SYMPHYSEOTOMIES OF 1893.			
COUNTRIES.	Cases.	Women died.	Children lost.	COUNTRIES.	Cases.	Women died.	Children lost.
France	37	6	13	Germany.....	37	1	8
Germany.....	12	2	4	United States...	31	5	7
Italy	11	..	1	Austria.....	30	7	4
United States....	7	..	2	France.....	24	4	5
Austria.....	7	..	2	Russia.....	10	1	3
Russia.....	4	1	1	Italy	5	..	2
Holland	1	1	..	Belgium	2	..	..
Brazil	1	..	..	Canada.....	2	..	..
Denmark.....	1	..	..	Switzerland	1	..	..
Ireland.....	1	..	..	Sweden.....	1	..	..
Switzerland	1	..	..	Roumania.....	1	..	..
Canada.....	1	..	..	England.....	1	..	..
India....	1	..	1	Holland	1	..	..
				Brazil	1	..	..
				India	1	..	..
13 countries....	85	10	24	15 countries...	148	18	29

The record of 1892 is believed to be very complete, as there has been time to collect the cases, and five statisticians worked upon it in correspondence in different countries. The table of 1893 is mainly due to the persevering labors of Dr. Franz Ludwig Neugebauer, of Warsaw, the most celebrated of all European statisticians. I have extended his list by an addition of American cases.

The average mortality under symphyseotomy is frequently inquired for, and has been conjecturally stated at ten per cent.; but this is not correct, as these tables will show. Under the operators of Naples, Pinard of Paris, and Zweifel of Leipsic, the death-rate has been much lower than this. In Italy, from January 1, 1886, to January 1, 1894, there were fifty-three operations, with a loss of two women and eight children. In the clinique Baudelocque, of Paris, there have been four women lost out of forty-eight; and in Germany, in 1893, the mortality (one in thirty-seven) was but two and three quarters per cent. These are the possibilities of the operation; but the general mortality in all countries, taken collectively, is thirty-four in three hundred and three, or over eleven per cent. The record of the United States and Canada of ten deaths in seventy-nine is over twelve per cent. The record of this country has been taken very thoroughly, as the fullness of the points in the table will bear witness;

and a very large proportion of the cases have been obtained or perfected by correspondence. Records have been secured that would never have been published, and the high rate of mortality is in a measure due to the search having been made without any desire to show other than the exact results, whether favorable or fatal, and a much more persevering hunt has been made for those cases which operators are not at all anxious to report in journals. After the character of the search made for American symphyseotomies, I am a little skeptical as to the thoroughness of the reports issued in European countries. What is wanted is a persevering local search made by a citizen of each country where any given operation is being performed, and then an intercommunication of the several parties engaged. This was done for the record of 1892.

Canada is to be commended for her progressive spirit, and congratulated upon her success; the operation of Dr. Springle followed, as the sixth, after the reading of my paper in Brooklyn. The union of the woman's symphysis gave him some anxiety, as the new intervening tissue admitted of a mobility of three eighths of an inch when alternately standing on one foot; but did not materially affect her locomotion. Such a result is uncommon where the pelvis is well secured and the patient obedient to the orders to keep still. The first woman operated upon in Philadelphia went back to Germany with her baby in two months. Her case was the first one reported in the United States, and at the time of the operation was thought to be the first in the country. Prof. Hirst has now operated six times without a maternal death, four of the cases being in two maternities and two in private practice; his first case was reported in twelve days after he operated, and had much to do with the introduction of the method. Prof. Charles Jewett antedated him in his operation by four days, and stood at the head of the American list as a symphyseotomist until Dr. Williams reported his three cases. Dr. Coggin was also a claimant for priority; but is no longer credited as an operator either in Alabama or Georgia, where he has been located. Personal statements from Athens have decided me to erase his name. This is the second report that I have felt obliged to drop from my tabular record for want of positive evidence as to credibility; there is no reason to discredit any one of the remaining seventy-four.

Symphiseotomies of the

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
1	Apr. 29, 1880.	Dr. Joel O. Williams.	Denison, Tex.	Private.	13	1	Transversely cont. pelvis.	18 hrs.	?
2	July 15, 1884.	Do.	William Penn, Wash. County.	"	23	1	Cont. pelvis.	18 hrs.	?
3	May 5, 1889.	Do.	William Penn, Tex.	"	18	1	Cont. pelvis and uræmic convulsions.	4 days.	Trans. 3 in.
4	Sept. 30, 1892.	Prof. Chas. Jewett.	Brooklyn.	"	22	1	Narrow inferior strait.	21 hrs.	Bis-ischiatic. 2½ in.
5	Oct. 3, 1892.	Prof. Barton Cooke Hirst.	Philadelphia.	Mat. of Univ. of Pa.	19	1	Cont. pelvis.	48 "	C. V. 3 in.
6	Oct. 7, 1892.	Prof. Anna E. Broomall.	"	Mat. of Woman's Hosp.	30	7	" "	24 "	3¼ in.
7	Oct. 25, 1892.	Prof. J. Edwin Michael.	Baltimore.	Free Hosp. for Women.	17	1	Narrow inferior strait—rachitic.	24 "	C. D. 3½ in.
8	Dec. 5, 1892.	Dr. Chas. P. Noble.	Philadelphia.	Kensington Hosp. for Women.	30	5	Cont. pelvis.	11 "	C. V. 2¾ in.

United States of America.

Part presenting.	Aid to delivery.	Result to woman	Result to child.	Sex of child.	Weight of child	B. P. diameter.	References.
R. O. A.	Forceps	Recov.	Lived.	M.	12 lb.	?	<i>Communicated</i> by the operator in 1894. (Woman and boy alive and well in 1895.)
L. O. A.	"	"	Dead ; craniotomy.	M.	?	?	<i>Com.</i> by the operator in 1894. (Woman alive and well in 1894.)
Vertex.	"	Died in 60 hours.	Lived.	M.	8 lb.	3 $\frac{3}{8}$ in.	<i>Com.</i> by the operator in 1894. <i>Med. News</i> , Phila., Jan. 26, 1895, p. 107.
"	Manual.	"	Died in 24 hours.	M.	?	3 $\frac{1}{2}$ in.	<i>N.Y. Jour. Gynæcol. and Obstet.</i> , Nov., 1892, pp. 1079-1082.
"	Forceps	"	Lived.	F.	6 $\frac{8}{10}$ lb.	3 $\frac{1}{2}$ in.	<i>Med. News</i> , Phila., Oct. 15, 1892, pp. 431-433. <i>Trans. Coll. of Phys.</i> , Phila., 1893, p. 237.
"	"	"	"	F.	6 $\frac{1}{4}$ lb.	3 $\frac{3}{4}$ in.	<i>Am. Jour. Obstet.</i> , 1893, xxviii, pp. 303-312.
"	"	"	Died on 3d day.	M.	6 $\frac{1}{2}$ lb.	4 in.	<i>Maryland Medical Journal</i> , January 31, 1893, p. 268. <i>Com.</i> of Nov. 5, 1892.
"	Version and forceps.	"	Lived.	M.	8 $\frac{1}{8}$ lb.	3 $\frac{3}{4}$ in.	<i>Medical News</i> , Philadelphia, Feb. 18, 1893, pp. 176-181. <i>Trans. Coll. of Phys.</i> , Phila., 1893, pp. 56-60.

No.	Date.	Operator.	Locality.	Hospital or private.	Age. No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
9	Dec. 16, 1892.	Dr. Harry McKennan.	Paris, Ill.	Private.	31 3	Rachitic pelvis.	12 hrs.	2 ³ / ₄ in.
10	Dec. 30, 1892.	Prof. H. J. Garrigues.	New York.	"	24 2	Gen. cont. pelvis, male type.	38 "	3 ¹ / ₄ in.
11	Jan. 1, 1893.	Prof. J. Milton Duff.	Pittsburg.	"	44 11	Exostosis from injury of pelvis.	48 "	3 ¹ / ₄ in.
12	Jan. 9, 1893.	Prof. Wm. T. Lusk.	New York.	Emergency Hosp., Bellevue.	27 1	Small pelvis; brow presenting; large head.	25 "	About 4 in.
13	Jan. 13, 1893.	Dr. Wolrad Winterberg.	San Francisco.	Private.	28 1	Funnel-shaped pelvis.	24 "	Trans. inf. 3 ¹ / ₂ in.
14	Feb. 5, 1893.	Dr. H'y C. Coe.	New York.	N. Y. Mat. Hosp.	30 1	Simple flattened pelvis.	14 "	C. V. 3 in.
15	Feb. 11, 1893.	Dr. Egbert H. Grandin.	"	Infant Asylum.	19 1	Gen. cont. pelvis.	14 "	3 ¹ / ₄ in.
16	Feb. 20, 1893.	Do.	"	"	20 1	"	7 "	3 ¹ / ₄ in.
17	Mar. 1, 1893.	Dr. Geo. N. Kreider.	Springfield, Ill.	Private.	26 1	Small pelvis and large head.	16 "	About 3 in.
18	Mar. 3, 1893.	Dr. Horatio R. Holmes.	Portland, Ore.	"	23 1	Cont. pelvis.	60 "	3 in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Left arm.	Version and forceps.	Died in 60 hours.	Lived.	F.	8 lb.	Average.	Med. News, Phila., Feb. 4, 1893, p. 130. (Symphysis divided by a metacarpal saw.)
Vertex.	Version	"	"	M.	7½ lb.	4 in.	Am. Jour. Med. Sci., Mar., 1893, pp. 286-298; April, 1893, pp. 399-417.
"	"	"	"	M.	9 lb. 3 oz.	3¼ in.	Com. by the operator, Feb., 1893.
Brow.	Version by vert. and forceps.	Died in 12 hours.	Died in 17 hours.	M.	9 lb.	4⅛ in.	Com. by the operator, Mar. 3, 1893. Am. Jour. of Med. Sci., April, 1893, p. 441.
L. O. A.	Forceps	Recov.	Lived.	M.	Est. 9 lb.	?	Med. News, Phila., Jan. 12, 1895, pp. 29-35. Com. of the operator.
Vertex.	Version	"	"	F.	8 lb. 1½ oz.	4¼ in.	Com. by the operator, Mar. 27, 1893. N. Y. Med. Rec., 1893, xliii, p. 485.
"	Forceps	"	"	M.	7 lb. 1 oz.	3½ in.	Com. by the operator, N. Y. Jour. Gynæcol. and Obstet., 1893, iii, pp. 461-465.
"	Version	"	"	F.	5 lb. 6 oz.	3⅜ in.	Op. cit. Am. Jour. Med. Sci., May, 1893, pp. 518-520.
"	Forceps	Died on 11th day.	Dead before operation.	M.	8 lb.	?	Com. by the operator, Mar. 19, 1893. Trans. Ill. Med. Soc., 1893, xliii, pp. 267-276.
"	"	Recov.	Lived.	F.	7½ lb.	3¾ in.	N. Y. Jour. Gynæcol. and Obstet., May, 1893, pp. 405, 406. Com. of June, 1893.

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
19	Mar. 8, 1893.	Dr. Edward P. Davis.	Philadelphia.	Mat. of Jefferson College.	30	4	Flat, rachitic pelvis.	20 hrs.	3 ³ / ₈ in.
20	Mar. 22, 1893.	Prof. Anna E. Broomall.	"	West Phila. House for Women.	25	2	Cont. pelvis.	50 hrs.	3 ¹ / ₄ in.
21	Mar. 24, 1893.	Dr. J. Clifton Edgar.	New York.	Private.	24	1	" "	48 hrs.	3 ¹ / ₄ in.
22	Mar. 31, 1893.	Dr. Horace Packard.	Boston.	Mass. Homœopathic Hosp.	28	1	Small pelvis.	48 hrs.	2 ³ / ₄ in.
23	Apr. 22, 1893.	Dr. Daniel Longaker.	Philadelphia.	Private. (1st operation).	30	4	Flat pelvis.	10 hrs.	3 in.
24	May 3, 1893.	Prof. Henry Parker Newman.	Chicago.	Private.	29	2	Gen. cont. pelvis.	24 hrs.	3 ¹ / ₂ in.
25	May 4, 1893.	Dr. Julius O. Cobb.	Port Townsend, Wash.	"	28	1	Equally cont. pelvis.	21 hrs.	?
26	May 8, 1893.	Dr. E. Gustav Zinke.	Cincinnati.	"	32	6	Flat pelvis.	72 hrs.	3 ³ / ₄ in.
27	June 13, 1893.	Dr. Robert L. Dickinson.	Brooklyn.	Flatbush Hosp.	26	2	Flat and gen. cont. pelvis.	12 hrs.	3 ¹ / ₄ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Vertex.	Forceps	Died in 72 hrs.	Lived.	F.	7 $\frac{1}{4}$ lb.	3 $\frac{1}{2}$ in.	N. Y. Med. Rec., May 13, 1893, pp. 577, 578.
"	"	Recov.	Dead before operation.	F.	8 $\frac{1}{4}$ lb.	4 in.	Am. Jour. Obstet., 1893, xxviii, pp. 303-312.
"	"	"	Lived.	M.	7 lb.	3 $\frac{1}{2}$ in.	Com. by the operator. N. Y. Medical Journal, vol. lix, Mar. 17, 1894, p. 343.
"	"	"	Dead before operation.	M.	9 lb.	3 $\frac{1}{2}$ in.	Com. of May 10, 1893. Daily Med. Cent., May 20, 1893, pp. 7, 8.
Shoulder.	Version by vertex and forceps.	"	Lived.	M.	7 lb.	3 $\frac{1}{4}$ in.	Com. by the operator, May 3, 1893. Annals of Gynæcol. and Pæd., Phila., 1893-'94, vii, p. 450.
Vertex.	Forceps	"	"	F.	12 lb.	4 in.	Com. by the operator, Jan. 1, 1894. Am. Jour. Obstet., Feb., 1894, pp. 250, 251.
"	"	"	Died soon afterward.	M.	9 $\frac{1}{2}$ lb.	?	N. Y. Med. Jour., Aug. 26, 1893, p. 226. Com. of Dr. J. C. House, Nov. 22, 1893.
"	"	"	Lived.	M.	9 lb.	3 $\frac{1}{2}$ in.	Com. by the operator, May 29, 1893. Am. Jour. Obstet., 1893, xxviii, pp. 588, 589.
"	"	"	"	M.	7 $\frac{1}{2}$ lb.	4 in.	Com. by the operator, June 14, 1893. Med. Rec., New York, 1893, xlv, pp. 679-681.

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor	C. V. diameter.
28	June 23, 1893.	Prof. Robert A. Murray.	New York.	N. Y. Mat. Hosp.	36	4	Small pelvis, with impaction.	6 hrs.	3 $\frac{1}{4}$ in.
29	June 26, 1893.	Prof. Anna E. Broomall.	Philadel-phia.	Mat. of Woman's Hosp.	42	12	Flat pelvis.	3 days.	3 $\frac{5}{8}$ in.
30	June 27, 1893.	Prof. Barton Cooke Hirst.	"	Philadel-phia Hosp.	32	1	Rachitic pelvis; dwarf, 4 ft. 6 in.	In-duced.	2 $\frac{3}{4}$ in.
31	July 21, 1893.	Dr. Cæsar A. von Ramdohr.	New York.	Private.	23	2	Justo-minor pelvis.	5 hrs.	3 $\frac{1}{2}$ in.
32	Aug. 28, 1893.	Dr. John Wother- spoon.	Seattle, Wash.	"	19	2	Disproportion between size of head and outlet.	10 hrs.	4 in.
33	Sept. 1, 1893.	Prof. Sheldon Leavitt.	Chicago.	"	30	3	Equally cont. pelvis.	24 hrs.	3 in.
34	Sept. 8, 1893.	Dr. James S. Brown.	Mont-clair, N. J.	"	25	2	Cont. pelvis.	20 hrs.	2 $\frac{3}{4}$ in.
35	Oct. 12, 1893.	Prof. Barton Cooke Hirst.	Philadel-phia.	Mat. of Univ. of Pa.	22	1	Rachitic pelvis; dwarf, 4 ft. 7 in.	In-duced.	2 $\frac{3}{16}$ in.
36	Nov. 8, 1893.	Dr. J. Clifton Edgar.	New York	Private.	19	1	Gen. cont. pelvis.	24 hrs.	3 $\frac{1}{4}$ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Oc.-post., R. O. P.	Forceps	Recov.	Lived.	F.	7 lb. 9 oz.	4 $\frac{1}{4}$ in.	<i>Com.</i> by the operator, Nov. 1, 1893.
Vertex.	"	Died on 11th day.	"	M.	6 $\frac{1}{2}$ lb.	3 $\frac{1}{2}$ in.	<i>Am. Jour. Obstet.</i> , 1893, xxviii, pp. 303-312.
"	Version	Recov.	"	M.	6 $\frac{1}{4}$ lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator. <i>Med. News</i> , Phila.
L. O. A.	Manual.	"	"	M.	8 $\frac{1}{2}$ lb.	3 $\frac{7}{8}$ in.	<i>Com.</i> by the operator. <i>N. Y. Jour. Gynæcol.</i> and <i>Obstet.</i> , 1893, iii, pp. 185-190.
"	Forceps	"	Lived 8 days.	M.	15 $\frac{1}{2}$ lb.	?	<i>Com.</i> by the operator. <i>Med. News</i> , Phila., 1894, lxiv, p. 501.
Vertex.	"	"	Lived.	M.	9 lb.	3 $\frac{3}{4}$ in.	<i>The Clinique</i> , Chicago, Dec. 25, 1893, pp. 544- 550. <i>Com.</i> of Jan. 10, 1894.
"	"	"	"	M.	10 lb.	3 $\frac{1}{2}$ in.	<i>N. Y. Med. Rec.</i> , Nov. 4, 1893, pp. 582, 583.
"	Version	"	Died in de- livery.	M.	?	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator. <i>Trans. Coll. of Phys.</i> , Phila., Dec. 6, 1893, p. 237.
"	"	"	Lived.	M.	7 lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator, Nov. 24, 1893. <i>N. Y.</i> <i>Medical Journal</i> , vol. lix, Mar. 17, 1894, p. 343.

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
37	Nov. 19, 1893.	Dr. Richard C. Norris.	Philadelphia.	Mat. of Univ. of Pa.	18	1	Flat pelvis.	89 hrs.	2 ⁹ / ₁₆ in.
38	Nov. 24, 1893.	Prof. T. Byron Robinson.	Chicago.	Private.	27	1	Transversely cont. pelvis.	16 hrs.	3 ¹ / ₈ in.
39	Dec. 19, 1893.	Dr. Thomas J. Watkins.	"	Cook Co. Hosp.	43	8	Gen. cont. pelvis.	36 hrs.	Not taken.
40	Dec. 23, 1893.	Dr. Edward P. Davis.	Philadelphia.	Mat. of Jefferson College.	25	2	Justo-minor pelvis.	31 hrs.	2 ³ / ₄ in.
41	Dec. 30, 1893.	Dr. Daniel Longaker.	"	Private.	30	5	Flat pelvis.	24 hrs.	3 in.
42	Jan. 12, 1894.	Dr. J. Clifton Edgar.	New York.	"	25	2	Gen. cont. pelvis.	14 hrs.	3 ¹ / ₂ in.
43	Feb. 17, 1894.	Dr. Henry Banga.	Chicago.	Chicago Polyclinic.	37	5	Rachitic pelvis.	16 hrs.	2 ⁵ / ₈ in.
44	Feb. 19, 1894.	Dr. Chas. W. Co-burn.	Philadelphia.	Private.	14	1	Undeveloped pelvis.	28 hrs.	4 ¹ / ₂ in.
45	Mar. 16, 1894.	Dr. Edward P. Davis.	"	Mat. of Jefferson College.	20	1	Justo-minor pelvis, threatening of eclampsia.	In-duced.	3 ³ / ₄ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Vertex.	Version	Recov.	Died in delivery.	M.	8 lb.	3 $\frac{1}{4}$ in.	<i>Com.</i> by the operator. New Eng. Med. Monthly, 1893-'94, xiii, July. p. 462-464.
L. O. A.	Forceps	"	Lived.	F.	7 lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator.
Vertex.	"	Died in 12 hrs.	"	M.	11 lb.	Crush-	Am. Jour. Obstet., Feb., 1894, pp. 249, 250.
"	"	Recov.	"	M.	7 lb. 11 oz.	4 $\frac{5}{16}$ in.	<i>Com.</i> by the operator, Jan. 25, 1894. Med. News, Phila., Apr. 14, 1894, p. 401.
"	"	"	"	F.	9 $\frac{1}{2}$ lb.	3 $\frac{3}{16}$ in.	<i>Com.</i> by the operator, Jan. 12, 1894. Annals of Gynæcol. and Obs., Phila., 1893-'94, vii, pp. 450-457.
"	Pod. version.	"	"	F.	9 lb.	3 $\frac{3}{4}$ in.	<i>Com.</i> by the operator, Feb. 19, 1894.
Transverse.	Forceps	"	"	M.	7 $\frac{11}{16}$ lb.	?	<i>Com.</i> by the operator. Am. Jour. Obstet., Dec., 1894, p. 761.
Vertex.	"	Died in 5 days.	Died in delivery.	M.	11 lb.	4 $\frac{1}{8}$ in.	<i>Com.</i> by the operator, May 10, 1895.
"	"	Recov.	Lived.	M.	5 $\frac{11}{16}$ lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator. Med. News, Phila., Apr. 14, 1894, p. 402.

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
46	Mar. 19, 1894.	Dr. Chas. P. Noble.	Philadelphia.	Kensington Hosp. for Women.	32	6	Cont. pelvis.	10 hrs.	2 $\frac{3}{4}$ in.
47	Apr. 3, 1894.	Do.	"	Private.	34	7	Flat, rachitic pelvis.	38 hrs.	C. D. 4 in.
48	Apr. 7, 1894.	Dr. Edward P. Davis.	"	Mat. of Jefferson College.	33	1	Flat, rachitic, funnel-shaped pelvis.	30 hrs.	C. V. 4 in.
49	Apr. 26, 1894.	Prof. Barton Cooke Hirst.	"	Private.	30	2	Flat, rachitic pelvis.	8 hrs.	3 $\frac{1}{8}$ in.
50	May 10, 1894.	Dr. James B. O'Neill.	Portland, Me.	Maine Eye and Ear Infirmary.	28	3	Gen. cont. pelvis.	26 hrs.	2 $\frac{3}{4}$ in.
51	May 14, 1894.	Dr. Geo. Gross.	San Francisco.	Private.	30	2	Head locked after delivery of breech.	12 hrs.	2 $\frac{1}{2}$ in.
52	June 17, 1894.	Dr. Henry D. Fry.	Washington, D. C.	"	29	1	Cont. pelvis.	48 hrs.	3 $\frac{1}{5}$ in.
53	June 19, 1894.	Prof. Malcolm L. Harris.	Chicago.	"	28	1	" "	30 hrs.	2 $\frac{3}{4}$ to 3 in.
54	June 21, 1894.	Drs. Collier and Grandin.	New York.	"	28	2	Flat, rachitic pelvis.	Induced.	3 $\frac{1}{2}$ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Vertex.	Forceps	Recov.	Lived	F.	6 $\frac{1}{2}$ lb.	3 $\frac{3}{8}$ in.	<i>Com.</i> by the operator. (Second operation on Case 9.)
"	"	"	Died directly.	M.	8 lb.	?	<i>Com.</i> by the operator.
L. O. A.	"	"	Lived.	F.	7 $\frac{1}{2}$ lb.	3 $\frac{3}{4}$ in.	<i>Com.</i> by the operator. Boston Med. and Surg. Jour., Aug. 23, 1894.
R. O. P.	"	"	"	F.	9 $\frac{3}{4}$ lb.	4 in.	<i>Com.</i> by the operator.
L. O. A.	"	"	"	F.	8 lb.	3 $\frac{1}{2}$ in.	Trans. Maine Med. Ass., 1894, pp. 477-485.
Breech.	Manual.	"	Dead.	F.	Average.	Average.	<i>Com.</i> by the operator. Occidental Med. Times, Sacramento, 1894, viii, p. 538.
L. O. A.	Forceps	"	Lived.	M.	9 $\frac{3}{4}$ lb.	3 $\frac{3}{4}$ in.	<i>Com.</i> by the operator.
R. O. A.	"	"	"	M.	10 lb.	Long.	Am. Jour. Obstet., Dec., 1894, pp. 765, 766. <i>Com.</i> of operator, Dec. 21, 1894.
L. O. A.	Version	"	"	M.	8 $\frac{1}{4}$ lb.	4 $\frac{1}{4}$ in.	<i>Com.</i> by the operator.

No.	Date.	Operator.	Locality.	Hospital or private.	Age. No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
55	June 27, 1894.	Prof. Henry J. Garrigues.	New York.	St. Mark's Hosp.	29 2	Soft tumor in recto-vaginal wall.	13 hrs.	Normal.
56	July 19, 1894.	Dr. T. E. Schum-pert.	Shreve-port, La.	Private.	30 .	Slightly cont pelvis and large head.	62 hrs.	3 $\frac{1}{2}$ in.
57	July 31, 1894.	Dr. Geo. W. Jar-man.	New York.	Blackwell's Island Hosp.	22 2	Justo-minor pelvis.	4 hrs.	?
58	Aug. 8, 1894.	Dr. Rich-ard C. Norris.	Philadel-phia.	Preston Retreat.	30 3	Flat rachitic pelvis.	6 $\frac{1}{2}$ hrs.	3 $\frac{1}{2}$ in.
59	Aug. 21, 1894.	Dr. Frank D. Gray.	Jersey City.	Christ Hosp.	27 3	Flat pelvis.	18 hrs.	?
60	Sept. 5, 1894.	Dr. Henry C. Coe.	New York.	N. Y. Mat. Hosp.	40 3	Cont. pelvis.	24 hrs.	3 $\frac{1}{2}$ in.
61	Sept. 20, 1894.	Prof. Malcolm L. Harris.	Chicago.	Private.	28 1	Small oblique pelvis.	16 hrs.	2 $\frac{1}{2}$ in.
62	Sept. 24, 1894.	Dr. J. Clifton Edgar.	New York.	"	35 4	Trans. nar-rowed pelvis.	9 hrs.	4 in.
63	Oct. 10, 1894.	Dr. Henry C. Coe.	"	N. Y. Mat. Hosp.	29 2	Flat pelvis.	1 $\frac{1}{2}$ hr.	3 $\frac{1}{2}$ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
Vertex.	Forceps	Recov.	Lived.	F.	10 $\frac{3}{4}$ lb.	?	<i>Com.</i> by the operator. N. Y. Medical Record, Nov. 10, 1894, pp. 577-580.
L. O. A.	"	Died on 5th day.	Dead ; destroyed by forceps.	M.	14 lb.	?	New Orleans Med. and Surg. Jour., May, 1895, pp. 788-792. <i>Com.</i> May 17, 1895.
L. O. A.	Version	Recov.	Lived.	M.	6 $\frac{11}{16}$ lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator.
L. O. A.	Forceps	"	"	M.	7 $\frac{1}{4}$ lb.	3 $\frac{1}{2}$ in.	<i>Com.</i> by the operator.
L. O. P.	"	"	Died in 6 hours, fract. os occipit.	M.	10 $\frac{1}{2}$ lb.	?	N. Y. Med. Record, May 18, 1895, p. 617. <i>Com.</i> by Dr. Joseph M. Rec- tor, May 20, 1895.
L. O. P.	Version	"	Died in 6 days, pneumonia.	M.	8 $\frac{3}{4}$ lb.	?	<i>Com.</i> by the operator, Oct. 12, 1894.
L. O. P.	Forceps	"	Lived.	F.	8 lb.	?	American Journal of Obstetrics, December, 1894, pp. 766, 767. <i>Com.</i> by the operator, December 21, 1894.
Vertex.	Version	"	"	F.	8 lb.	3 $\frac{3}{4}$ in.	<i>Com.</i> by the operator, April 22, 1895.
"	"	"	Died in $\frac{1}{2}$ hour.	M.	6 $\frac{14}{16}$ lb.	?	<i>Com.</i> by the operator, Nov. 10, 1894.

$\frac{C}{N}$	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
64	Oct. 23, 1894.	Dr. Leonard Wheeler.	Worcester, Mass.	Worcester Hosp. Mat.	28	7	Gen. cont. pelvis.	10 hrs.	3 $\frac{1}{4}$ in.
65	Oct. 26, 1894.	Dr. H'y McM. Painter.	New York.	Out-patient service, Lying-in Hosp.	19	1	Flat rachitic pelvis. Right lateral obliquity.	15 hrs.	3 $\frac{1}{4}$ in.
66	Nov. 6, 1894.	Prof. Rob't A. Murray.	"	N. Y. Mat. Hosp.	27	1	Gen. cont. pelvis.	14 $\frac{1}{2}$ hrs.	C. D. 3 $\frac{3}{4}$ in.
67	Dec. 8, 1894.	Prof. Barton Cooke Hirst.	Philadelphia.	Mat. of Univ. of Pa.	30	1	Moderately cont. pelvis and slightly enlarged h'd.	20 hrs.	C. V. 3 $\frac{3}{4}$ in.
68	Jan. 4, 1895.	Dr. Thos. R. Savage.	New York.	Private.	24	3	Funnel-shaped pelvis.	24 hrs. Labor induced.	4 $\frac{1}{2}$ in. estimated.
69	Jan. 25, 1895.	Dr. J. Clifton Edgar.	"	"	25	1	Funnel-shaped pelvis, cont. outlet.	64 hrs.	?
70	Feb. 20, 1895.	Dr. Edw'd P. Davis.	Philadelphia.	Polyclinic Hosp.	27	1	Justo-minor pelvis.	At intervals for a week.	3 $\frac{3}{8}$ in.
71	Mar. 24, 1895.	Dr. Daniel Longaker.	"	Private. (Case 24, 2d operation.)	32	5	Flat pelvis.	15 hrs.	3 in.
72	Mar. 28, 1895.	Dr. J. Richard Taylor.	Sag Harbor, N. Y., on Shelter Isl'd.	Private.	27	1	Flat pelvis, œdema of vagina and vulva.	62 hrs.	3 $\frac{3}{8}$ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
L. O. A.	Forceps	Recov.	Lived.	M.	$8^{10}/_{16}$ lb.	4 in.	Boston Med. and Surg. Jour., 1894, cxxxi, p. 637. <i>Com.</i> by the operator, Dec. 4, 1894.
Vertex.	Version	"	"	M.	$8^{1}/_{2}$ lb.	$3^{3}/_{4}$ in.	<i>Com.</i> by the operator, Dec. 7, 1894.
L. O. A.	Forceps	"	"	M.	$6^{14}/_{16}$ lb.	$4^{1}/_{4}$ in.	<i>Com.</i> by the operator, Dec. 14, 1894.
R. O. A.	Craniotomy, hydroceph.	"	Dead; craniotomy.	F.	$9^{1}/_{2}$ lb.	$4^{1}/_{8}$ in.	<i>Com.</i> by the operator, Jan. 12, 1895.
L. O. A.	Forceps	"	Lived.	F.	$6^{3}/_{4}$ lb.	$3^{1}/_{2}$ in.	<i>Com.</i> by the operator, May 14, 1895.
Brow.	Version	"	"	F.	8 lb.	$3^{1}/_{2}$ in.	<i>Com.</i> by the operator, Mar. 4, 1895.
Vertex.	Forceps	Died on 4th day.	"	M.	?	$4^{3}/_{16}$ in.	<i>Com.</i> by the operator, Apr. 19, 1895.
R. O. I.	"	Recov.	"	M.	7 lb. + $3^{15}/_{16}$ in.		<i>Com.</i> by the operator, Apr. 14, 1895.
L. O. A.	"	"	Dead before operation.	F.	$7^{15}/_{16}$ lb.	$3^{1}/_{4}$ in.	<i>Com.</i> by the operator, May 13, 1895.

No.	Date.	Operator.	Locality.	Hospital or private.	Age.	No. of preg.	Cause of difficulty.	Time in labor.	C. V. diameter.
73	Mar. 29, 1895.	Prof. Barton Cooke Hirst.	Philadelphia.	Private.	33	4	Gen. cont. pelvis.	4 days.	3 $\frac{1}{2}$ in.
74	Apr. 16, 1895.	Prof. Wm. T. Lusk.	New York.	N. Y. Infant Asylum.	19	1	Rachitic pelvis.	19 hrs.	3 $\frac{1}{4}$ in.

Symphysiotomies

1	Dec. 6, 1892.	Dr. J. Anders'n Springle.	Montreal.	Private.	25	1	Cont. pelvis.	24 hrs.	3 in.
2	May 2, 1893.	Prof. J. Chalmers Cameron.	Do.	Montreal Mat.	20	1	Rachitic pelvis. Dwarf, 4 ft. 6 $\frac{1}{2}$ in.	14 hrs.	2 $\frac{9}{16}$ in.
3	June 30, 1893.	Dr. J. H. Burns and Dr. A. B. Athert'n.	Toronto.	Private.	34	1	Small pelvis. Dwarf, 4 ft. 6 in.	33 hrs.	3 in.
4	July 26, 1894.	Prof. J. Chalmers Cameron.	Montreal.	Montreal Mat.	23	1	Flat rachitic pelvis; eclampsia; 19 convulsions.	13 $\frac{3}{4}$ hrs.	2 $\frac{3}{4}$ in.
5	Oct. 10, 1894.	Dr. C. P. Sylvester.	Toronto.	Grace Hosp.	27	3	Cont. pelvis.	Morning to midnight.	2 $\frac{3}{4}$ in.

Part presenting.	Aid to delivery.	Result to woman.	Result to child.	Sex of child.	Weight of child.	B. P. diameter.	References.
R. O. P. Forceps		Recov.	Lived.	M.	7 $\frac{1}{2}$ lb.	3 $\frac{3}{4}$ in.	<i>Com.</i> by the operator, Apr. 15, 1895.
Head.	"	Died on 7th day.	"	F.	8 lb.	?	<i>Com.</i> by the operator, May 4, 1895.

of Canada.

R. O. A.	Forceps	Recov.	Lived.	F.	7 $\frac{1}{4}$ lb.	3 $\frac{3}{4}$ in.	Montreal Med. Jour., Jan., 1893. <i>Com.</i> Apr. 2, 1893, and Dec. 1, 1894.
L. O. A.	"	"	"	F.	7 $\frac{1}{2}$ lb.	3 $\frac{5}{8}$ in.	<i>Com.</i> May 10, 1893.
L. O. A.	"	"	"	F.	7 lb. 9 oz.	?	Dominion Med. Monthly, July, 1893, pp 1, 2. <i>Com.</i> of Nov. 26, 1894.
L. O. A.	"	"	"	M.	7 lb. 4 oz.	3 $\frac{3}{8}$ in.	<i>Com.</i> Aug. 8 and Dec. 1, 1894.
Vertex.	"	"	"	M.	8 lb.	3 $\frac{1}{8}$ in.	Canadian Practitioner, Feb., 1895, pp. 92-93.

The Present Status of Symphyseotomy.—This mode of delivery is unquestionably now an established one in a number of countries, and has met with decided favor in some parts of the United States. Its chief centers are Paris, Leipsic, New York, and Philadelphia. It was never very largely performed in Naples, ranging from six to twelve times a year, and has recently fallen off quite perceptibly. It has never become a favorite in Milan or Florence, although pelvic deformities overcome by craniotomy are quite common, and in former days led to many Cæsarean sections, particularly in Milan, which were almost uniformly fatal. There appears to be a feeling of rivalry against the operation that has given so much credit to Morisani and in favor of that which bears the name of Porro, of Pavian fame. There have been twenty-three symphyseotomies performed in Philadelphia and twenty-one in New York city, with four deaths in the former and two in the latter. Five children were lost in Philadelphia and three in New York. The surgery of symphyseotomy has much less to do with the death of the woman than the obstetrical manipulations that precede and follow it. This has certainly been the experience of our country, as shown by Cases XII, XVII, XXXIX, and LVI.

329 SOUTH TWELFTH STREET, PHILADELPHIA,

ARTIFICIAL ABORTION.*

BY HENRY J. GARRIGUES, A. M., M. D., NEW YORK.

To judge by the very frequent applications I receive from women, married not less than unmarried, for interruption of early pregnancy and the wonderful *sans gêne* with which the request is made as well as by the coroner cases reported in the public papers, I am inclined to think that this operation is being performed quite frequently and without scientific indications.

Personally I have hurt my business interests very considerably by constantly refusing to perform this operation, except when it was called for on strictly scientific grounds, not only in my mind, but ac-

* Read before the American Gynæcological Society, May 30, 1895.

according to the opinion of other competent, and sometimes superiorly able judges.

Indications.—Different obstetricians differ in their views in regard to the circumstances that call for artificial abortion, and with some scientific considerations are being mixed with religious doctrines. The Roman Catholic Church does not allow its adherents to kill the fœtus under any circumstances. From a scientific and humane standpoint the operation may be said to be indicated when on account of narrowness of the genital canal a viable child can not be born, or when the mother's health is such that it would expose her to death or dangerous sickness to continue in the pregnant state.

The first indication, that based on mechanical obstruction, occurs rarely in this country, where the higher degrees of pelvic deformity are exceedingly rare. Before deciding on the performance of artificial abortion the patient ought also to be told her chances if she waits and is delivered by symphysiotomy or Cæsarean section.

The second indication, that based on disease in the mother, is much more common. Mere unwillingness to increase her family, general nervousness, the dread of the supposed dangers of childbed, the painful reminiscences from previous experience, ought not for a moment to be entertained by a conscientious practitioner. But as soon as well-ascertained facts in her past or the presence of demonstrable serious disease makes it likely that the patient would risk her life or seriously imperil her health by carrying her child to term, it is proper for her physician to recommend a speedy interruption of her pregnancy.

Conditions that justify artificial abortion apart from acute diseases are especially serious pulmonary tuberculosis, severe valvular heart disease, an aneurism of the aorta, carcinoma that is not amenable to radical treatment, chronic nephritis, serious affections of the nerve centers, present or threatened insanity, etc.

In many of the conditions that indicate artificial abortion we should hesitate the less to destroy the fœtus, if the condition is such as to make it likely that the fœtus itself may inherit the disease, *e. g.*, tuberculosis, carcinoma, or syphilis.

In my opinion the mere presence of albuminuria is not a valid indication for artificial abortion or induction of premature labor. I have successfully treated numerous cases of this kind with chloride of iron, small doses of chloral hydrate, warm baths, and milk diet even when decided premonitory symptoms of eclampsia, such as headache, cardialgia, vertigo, and dim vision were present. This in-

dication is in my opinion only valid when there is direct danger to life.

Precautions.—No one, not even the most experienced obstetrician, should take the responsibility of performing artificial abortion guided by his own judgment alone. The case ought to be submitted to one or more other medical men, choosing if possible the consultants in such a way as to obtain the most reliable advice according to the nature of the condition or disease calling for interference, an obstetrician in cases of obstruction in the genital canal, a neurologist in cases of insanity, a syphilologist in cases of syphilis, a man with wide medical experience in cases of kidney disease, etc.

The outcome of the consultation should be put in writing, signed by the consultants, and kept by the man who is to perform the operation. I take also the precaution to acquire the written consent of the husband, if there is one, and of the patient herself. In case of untoward symptoms arising after the operation, or of a fatal issue, these precautions would protect the operator against all the blame that those who have asked for the operation, the friends and the patient herself, often lay at his door who has only been actuated by the purest instincts of humanity and the most approved scientific doctrines.

Modus Operandi.—When artificial abortion has been decided upon, the question arises how it ought to be performed. Most text-books, even of a recent date, give advice which in the writer's opinion is dangerous or inadequate. Even in the latest edition of a justly celebrated work on obstetrics it is recommended to bring abortion about by means of a sponge tent inserted into the cervical canal, a procedure that contains the greatest possible danger of causing septicæmia. Not so bad, but still objectionable is the advice of others to puncture the ovum through the cervical canal.

I think we should learn to perform artificial abortion by seeing the results of mismanagement and of good treatment in spontaneous abortions. Abortion offers two dangers, one is hæmorrhage, the other is septicæmia. If the uterus is emptied, curetted, washed out with an antiseptic fluid, drained and tamponed in time, both these dangers are avoided.

The same principles ought to guide us in inducing artificial abortion. The patient is anæsthetized, the vagina, vulva and nearest part of the outer surface are disinfected as for childbirth or a gynecological operation. The cervical canal is dilated by means of coniform hard-rubber and expanding steel dilators until there is room enough

at least for a curette, but if possible for a finger besides. Not only the fœtus and the ovum, but the spongy endometrium should be removed, the latter forming a mass that easily bleeds and has to become disintegrated and to be expelled. It is therefore better to remove it at once. In fact I scrape as long as anything comes out. Before I begin to scrape I wash out the uterus with creolin and after having finished scraping, I let a whole quart of a one-per-cent. solution of this drug run through the cavity.

If the uterus is small, say during the first and second months of utero-gestation I do not think it is necessary to drain. At that period I simply tampon the vagina until the next day in order to be safe against hæmorrhage. When the uterus forms a larger cavity, in which bloody discharge might stagnate, I think it is better to pack with iodoform gauze, gradually withdrawing the packing a little every day, so as to give the uterus a chance of contracting well before the last of the packing is removed from four to six days after the operation. The genitals should be covered with my usual occlusion dressing, and the patient should be kept in bed for a week or two. As long as the packing stays in I only wash the vagina with pledgets of absorbent cotton dipped in creolin emulsion, using a Sims speculum. After the removal of the drain, vaginal injections are used three times, and later twice a day as long as there is any discharge.

The operation here described can be used until the end of the fourth month. After that time the measures used for induction of premature labor are indicated, especially dilatation of the cervix, introduction of a bougie, and packing of the cervical canal with iodoform gauze.

The method here described offers the advantage that all is done in one sitting, which, however, may last one or two hours.

In order to facilitate the rapid dilatation of the cervical canal, I have had a series of ten olives made of hard rubber and adapted to an S-shaped handle. They range from No. 22 to 45 of the American scale, filling out the gap between the two sets of Hanks' dilators.

This method has been followed with complete success in the following four cases :

CASE I.—Mrs. H., American, aged twenty-four, pregnant for the first time, was sent to me by one of the most prominent syphilologists of the country, who expressed it as his opinion that the pregnancy ought to be interrupted. It was in many respects a sad case. The husband, while away from home, had illicit connection, contracted syphilis without knowing it, and after his return communicated the

disease to his wife. When I saw them he had been sick a little over a year, she a little less than a year. The antisypilitic treatment had told much on her. She was anæmic and weak. Here, then, we had a mother suffering from florid syphilis, with a constitution undermined by the disease and the treatment instituted for it, and, furthermore, we had a foetus of one month doomed to be born with hereditary syphilis, unless, what is more likely, Nature interrupted pregnancy at a later stage. It was known that the pregnancy dated from the 30th of November, and I saw her a month later.

Under the circumstances I found the operation indicated. I secured the assistance of yet another doctor. We declared ourselves all three unanimously in favor of the performance of the operation. I obtained the written consent of husband and wife, and the operation was performed on the first day of January, 1891. The cervix was dilated with Hanks' coniform and my own expanding dilators, the whole interior of the uterine body was curetted with Simon's sharp spoon, bringing away not only the ovum but the decidua. The foetus was not seen. An intra-uterine douche of a one-per-cent. creolin emulsion was given and the vagina tamponed. The next morning the tampon was removed and my perineal occlusion dressing applied.

The creolin causing a smarting sensation was replaced by a two-per-cent. solution of carbolic acid repeated three times a day the first four days, and thereafter only twice a day. There was very little discharge. Some soreness in the right side of the pelvis yielded to a hot-water bag and suppositories with one third of a grain of morphine morning and evening. The temperature never rose above 99.8° F. nor the pulse above 100. She was kept in bed for a week. On the ninth day she was allowed to take a ride in a carriage, and on the twelfth day I saw her for the last time.

CASE II.—Miss H., American, aged twenty, first pregnancy. This patient was taken with repeated chills, had a temperature of 102° F., and lost some blood *per vaginam*. She denied the possibility of pregnancy. I was called in consultation by the family physician on May 7, 1894. Physical examination showed a pregnancy at the end of two months; cervix closed. I diagnosticated the condition as one of septicæmia, gave a very doubtful prognosis, and advised artificial abortion as a life-saving operation. A third physician was called in to help us.

The case was treated in a similar manner to that employed in the preceding one, the only difference being that the foetus was removed first, then the ovum and the decidua.

The temperature fell to 101° F. the same evening, and to 100° F. the next day, and it was normal thereafter. At the end of a week she was well.

CASE III.—Mrs. B., American, aged twenty-four, mother of two children, respectively four and two and a half years old. I was her accoucheur on both occasions. The first time she was very seriously ill with nephritis; the second childbirth was followed by insanity, for which she was treated several months in a lunatic asylum, and now she had already developed pronounced melancholia. She suffered also from nausea, vomiting, toothache, and insomnia. She had skipped one menstruation four weeks previously, the uterus was enlarged, ante-flexed, and Hegar's sign was present.

I gave a written opinion as to the advisability of performing artificial abortion. This view was concurred in by an eminent neurologist who had treated her during her previous puerperal insanity, and again examined her as to her mental condition in this new pregnancy.

The operation was performed on December 9, 1894, in the same way as in the preceding cases. The morning after the operation the patient had a temperature of 100° F. She continued for three weeks to suffer from nausea, for which she was treated with bismuth, hydrocyanic acid, tincture of iodine, oxalate of cerium, and extract of nuxvomica. Otherwise she made a speedy and uneventful recovery. She got out of bed on the ninth day. The effect on her mind was striking from the very next day after the operation. She declared that a heavy weight was taken from her brain, she became again cheerful, and has remained in excellent health ever since.

CASE IV.—Mrs. K., American, about forty years old, mother of five children, about four months pregnant. In this case I had not known the patient before, and could only be guided by the testimony of the two prominent physicians and highly respectable men who knew her previous history. One certified over his signature that she had been constantly suffering throughout all her pregnancies from pain, digestive disturbances, insomnia, etc., and that she now had been sick for the last eighteen months, and that she would be greatly injured physically if the present pregnancy was not interrupted.

The other, an eminent alienist, stated in writing that he had attended Mrs. K. in a medical capacity for over a year; that at the time of his first visit to her, for a long time previous to that, and for a considerable period thereafter, she was mentally and bodily so run down as to be almost constantly dominated by imperative conceptions (a fear of going out alone, etc.). She was in his opinion upon

the verge of a neurasthenic psychosis. After weeks of careful treatment she recovered to a certain extent. He declared that fearing that the carrying of the child with its physical and mental effects would throw her back into her former state and probably bring on an attack of insanity, he advised the performance of artificial abortion.

The operation was performed on March 22, 1895. While it had been very easy in the three other cases, it was quite difficult and tedious in this, the internal os offering considerable resistance; the coniform dilators went in easily enough, and my own was expanded to its full capacity (an inch and a quarter). Using the finger and the three smallest olives of Hanks' abortion dilators, I finally obtained room enough to introduce one finger and an instrument. The fœtus was in cross presentation, with the head in the left side. The liquor amnii poured out, then the cord followed, which I pulled off. Then I could bring down the left foot, then the right. The toes being turned forward, I rotated the body so as to bring the back forward, and delivered the arms. The head tore off and gave a good deal of trouble. Finally, I crushed it with a polypus forceps and succeeded in extracting it. Before that I got the placenta out in one piece with the large dull wire curette. There was very little hæmorrhage. The whole interior of the body of the womb was cleaned with the curette and packed with iodoform gauze. The vagina was tamponed with the same material and absorbent cotton wrung out of creolin emulsion.

The next evening the temperature was 100.4° F.; after that it varied between 98° and 99°. The cotton tampons were removed the next morning, the gauze in the vagina and part of that in the uterus were removed on the third day, the remainder on the fourth day. The first few days the patient had some soreness in the lower part of the abdomen where counter-pressure had caused discoloration of the skin. From the fourth day she felt well. To further the involution she was given fluid extract of ergot (3 j, t. i. d.), and the pain was soothed by the application of an ice bag and the administration of a little morphine. She left her bed and dismissed her nurse on the fourteenth day. A few days later she went out, and has been in good health since.

TO CONTRIBUTORS AND SUBSCRIBERS.

Articles and letters for publication, books and articles for review, exchanges, and communications in regard to the editorial management, should be addressed to Dr. J. DUNCAN EMMET, 91 Madison Avenue, New York City.

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Each contributor will be supplied with a number of copies of the JOURNAL on application. Photo-engravings will be furnished free of cost if proper drawings or negatives are provided, and electrotypes or engravings will be furnished at cost.

Alterations in the proof will be charged to authors at the rate of sixty cents an hour, this being the expense that the JOURNAL incurs by such changes.

All contributors of original papers will receive as hitherto one hundred and fifty reprints without covers, free. When fifty or more extra reprints with covers are ordered, the latter will be supplied with all.

EDITORIAL.

ANNOUNCEMENT.

Very late last autumn Dr. A. H. Buckmaster, co-founder and co-editor of this JOURNAL, accepted the Professorship, at the University of Virginia, of the Practice of Medicine and of Obstetrics. It was found to be impracticable, at so great a distance and with his new and arduous duties, that he should continue with us the editorial management, which his intelligence and energy had done so much to make successful. Not long after his departure from New York, therefore, he decided to sever his connection completely with this JOURNAL. This he did and for the past six months the responsibilities and duties of Proprietor-Editorship, which previously had been equally divided, have devolved solely upon us. We have during this time proved beyond peradventure, I hope, our determination to spare no effort to make the JOURNAL more and more valuable to our subscribers and to the medical profession at large.

It was considered inexpedient to make the announcement of Dr. Buckmaster's retirement—and to make the necessary change on the title page—until the present volume should have been completed. This occurs with this month's issue. Hence, with Dr. Buckmaster's permission and approval, we have continued the use of his name in connection with our own until now.

But with the first number of the new volume, which begins in July, his name upon the title page will be replaced by that of Dr. James N. West, as Associate Editor, who has, practically, occupied this position

since Dr. Buckmaster's retirement and whom we now take great pleasure in introducing officially to our subscribers.

Our predominating purpose in editing this periodical has always been to bring it to and to maintain it at the highest possible standard of scientific importance and literary excellence, and all merely personal advantage shall be subordinated to this object, which we will pursue with increasing energy and unwavering singleness of purpose.

Our policy toward our contributors has, from the beginning, been a generous one, and this policy shall become broader and broader with the increasing success of the JOURNAL.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.

On the twenty-eighth, twenty-ninth and thirtieth of May, this Society held its Twentieth Annual Meeting in Baltimore. Its age, its scope of membership and the large number of men, very prominent in this specialty, which its roll-call embraces easily place it among the very first at least—not to make invidious comparisons—of special medical societies in the United States. It is also notable for the scientific activity of its sessions, to which the stringent rules in regard to the attendance of members greatly conduce. For these reasons and because its work lies peculiarly within the scope and aim of this JOURNAL, we now, for the second time, publish its transactions not only in full but in one number and almost immediately after the close of the meeting. Last year this most arduous enterprise, thitherto unprecedented in the history of medical journalism, was accomplished *within the short period of six days*. The number of the JOURNAL which contained these transactions presented that month *two hundred and twenty-four pages of reading matter*—a very much larger number of pages than have ever before appeared in any issue of any medical journal.

This year, in this number, we repeat this triumph but in a much more effective and satisfactory manner. We publish a majority of all the papers read, in the original, and full abstracts (prepared for us by the authors) of all the others, together with a verbatim report of the full discussion. Many of our readers will barely have reached home, when they will have the satisfaction of reading at their leisure, and

while the subject is still fresh in their minds, a complete report of all they have so recently heard.

The bulk of this material is so great and the scope and interest of the papers so extensive and varied, that we have decided this year to exclude all extraneous matter from this month's issue. In doing this we feel that not only are we paying a well-deserved compliment to the prominence and importance of this Society but that the presentation of the transactions in this complete manner and without division of interest will be a source of peculiar gratification to the many of our readers, who have not had the opportunity of being present at the reading of the papers and at their attendant discussions.

The subject of greatest interest at this meeting was easily that of *hysterectomy* and especially that form of it which is accomplished through the vagina. Of the whole number of papers read seven were devoted exclusively to the several methods of treating fibroma and four others referred indirectly to this subject. Seven dealt with the puerperal state, especially in regard to eclampsia, while the remaining papers were devoted to various subjects, from "ureteral work" to "symphysiotomy." Each reader can not fail to find subjects of special interest to himself, while all the papers are replete with general interest to every medical man.

CORRESPONDENCE.

THE PRESTON RETREAT.

PHILADELPHIA, April 28, 1895.

To the Editors of the American Gynecological and Obstetrical Journal :

DEAR SIRS : I inclose a letter which I will ask you to publish in the next issue of your JOURNAL. The statements therein made are absolutely correct and capable of ready demonstration. I send the letter to you for publication, prompted by a desire for accurate statement of statistics. Dr. Price has at all times treated me with courtesy, and I am therefore not actuated by any other motive.

In your March issue, p. 340, I notice the statement of Dr. Joseph Price that "in over fourteen hundred cases at the Preston Retreat, not to speak of the thousands of cases in my individual practice, I have not resorted to the curette nor lost a case." I have seen a simi-

lar statement quoted a number of times but have never happened to see it directly made before, so that I have for the first time an opportunity of correcting it. Doubtless Dr. Price had in mind, when he made this statement, that he had had no deaths in the institution from sepsis. Since, however, his statement and not his intention has been printed, I think it incumbent upon me, in justice to past and future records of the Retreat, to call attention to the error. The mortality record of the Preston Retreat during Dr. Price's residency there is as follows: There were ten hundred and ninety confinements and two deaths in the institution, with two more deaths outside of it that should unquestionably be credited to it. One of these was in the case of a woman sent on the sixteenth day from the Preston Retreat to the Pennsylvania Hospital, where she died three weeks later, and it was found at the post-mortem examination that she had appendicitis and purulent peritonitis. The second death outside the hospital followed a Cæsarean section. The woman had been delivered once by Dr. Price, and a number of times during Dr. Goodell's incumbency, by the induction of labor, high forceps, and version. For her last labor Dr. Price determined to perform Cæsarean section, and for this purpose the patient was admitted to his private hospital, where she was operated upon with a fatal result. The Preston Retreat enjoys a remarkable record achieved by the distinguished men who have had charge of the institution in the past—the late Dr. William Goodell and Dr. Joseph Price; but to be just to other similar institutions it is desirable to correct the statement that there have been at the Preston Retreat at any time “thirteen hundred and thirteen consecutive cases without a death from any cause.”

Very truly yours,

RICHARD C. NORRIS.

THE PRESTON RETREAT.

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL
SOCIETY.

Twentieth Annual Meeting, May 23, 29 and 30, 1895.

The *President*, MATTHEW D. MANN, M. D., in the Chair.

Dr. T. A. ASHLEY, of Baltimore, was presented and delivered the

Address of Welcome.

After another year of anxious care and responsible labor we come together from every section of our country to grasp the hand of fellowship, to exchange cordial greetings, and to strengthen the ties which bind us together in a noble work of co-operation and of fraternity.

Our Society exists for two purposes. The first object is to promote knowledge and truth in a special field of labor as honorable and responsible as any that can engage the attention of learned and earnest minds. Its second object is to stimulate generous feelings and sincere friendship among its members, and to unite all in earnest work, in harmony of effort and in loyalty to noble principles of science and benevolence. During the entire life of this Society these purposes have been enforced. Its fellows have come together from year to year from widely separated fields of labor, bringing the experience gathered by toil and observation as an offering to the scientific works of our meetings.

These offerings have been presented and have been accepted in a spirit of frankness and independence which has done credit to the fairness of our proceedings. Our associated work has been no less marked for the wisdom and soundness of its conclusions than for originality which has characterized its contributions to the science and the art of gynæcology. From the very beginning of its organization until the present moment this Society has been the exponent of every advance which has been made in correct methods of work and in true principles of scientific progress. Its deliberations have been accepted by the entire professional mind as the trusted offerings of earnest and learned men. We have, then, no occasion to apologize for the past achievements of this body.

We have every encouragement to press forward along the lines of policy established by our predecessors, whether with us to-day or

numbered with the silent majority. It is our noble privilege to seek to maintain our present honored position among the scientific organizations of the world. With the marvelous development of original work, which followed the cultivation of an undeveloped territory during the past nineteen years, we can no longer hope to keep this pace.

The fields of intravaginal and of intra-abdominal surgery had scarcely been entered when this Society was organized. In its short career have been witnessed the startling results which have followed as procedure after procedure has been inaugurated and new lines of thought and action have become established principles. Our work for the future must progress along lines perhaps less striking in their brilliancy, but equally promising, we believe, in their lasting results. We have reached an era of painstaking labor, of accuracy and minuteness of observation, and of perfection in technique. Methods of study and of work must pay obedience to habits of detail, to careful consideration of minor conditions, and to problems which must largely be evolved by study in the laboratory and in the operating room. While it was possible for a McDowell toiling in the wilds of Kentucky to inaugurate the field of abdominal surgery, and for Marion Sims in the swamps of Alabama to create the field of intravaginal plastic surgery, no such opportunities are presented to the gynæcological surgeon of to-day. All grosser forms of disease and of procedure within the abdomen and within the vagina have been considered. It, for the most part, remains for this and for coming generations of our class to perfect the technique of recognized procedures, to define the influence of minor conditions, to mark distinctions between methods and plans of action, and to unravel those problems in ætiology which bacteriological investigations may show to have an influence upon disease and upon operative work. Along these lines of progress many obscure problems confront us, and yet I doubt not that in the future, as in the past, the fellows of this Society will be found leading the advance column in the elucidation of these unknown conditions.

Mr. President, in meeting here in our city I need not call your attention to the facilities which exist for original study and investigation. With men and institutions equipped for every form of scientific and clinical work, it is believed that our city will contribute no insignificant part to the perfection of our knowledge of scientific gynæcology.

While not possessing the population, wealth, and commercial drive

of a few older and larger centers of population, Baltimore has always shown her appreciation of every form of human achievement. Her institutions of learning, her public libraries, and the beautiful monuments which ornament many of her parks and public squares, bear testimony to the fact that our people are not wanting in sentiments and actions which ennoble human nature and exalt manly and heroic efforts.

While sensible of the advantages which come from the careful and diligent pursuit of every form of mental and physical labor, our people fully recognize that there are higher objects and duties than the incessant chase for wealth. We are a social and humanity-loving people in the strict acceptation of these terms.

Mr. President and Fellows, while in the pursuit of the noble scientific interests which call us together, we ask you to interrupt your labor from time to time and enjoy the hospitality which your professional brethren of our city will cordially extend to you. We welcome you all to our hearts and homes.

We bid you lay aside the cares and anxieties which may follow you from your respective fields of labor, and to share the pleasure we experience in having you meet in our beautiful city.

Let us cultivate here the friendships and cordial feelings which have always characterized previous meetings of our Society, so that we all may feel, when our meeting has come to its close, that it has been good for us to have met together. On behalf of the resident fellows of our Society, I again bid you a most cordial welcome.

The PRESIDENT: I desire, on behalf of the Society, to return the expressions of good fellowship, and say that the Society always feels itself to be peculiarly fortunate when the meeting occurs in Baltimore. We always have a capital good time, and we can only say that we reciprocate all the kindly, cordial feelings that are expressed by the Baltimore gentlemen.

A number of visitors were then placed in nomination and elected guests of the Society.

Dr. KELLY moved that all the papers be restricted to twenty minutes, opening discussion to ten minutes, and the subsequent discussions to five minutes each.

Dr. BALDY moved, as an amendment, that the discussion be limited to ten minutes, which was seconded and lost, and the original motion was then carried.

Dr. GORDON moved that all papers presented, when the author is not present, shall be read by title only. Seconded and carried.

A communication was received from the University Club, tendering the privileges of the club to the members of the Society.

Abstract of a paper entitled

THE RENAL CATHETER AND ITS USES IN THE
DIAGNOSIS AND TREATMENT OF RENAL DISEASES.

BY HOWARD A. KELLY, M. D., BALTIMORE.

I. Any one familiar with urinary diseases can readily see the advantages of a renal catheter, for example, in emptying fluid accumulations in the renal pelvis and in diagnosing and passing strictures of the upper ureter, and in differentiating soft, malignant tumors from sacculated accumulations which could be evacuated.

I have devised and used such a catheter.

II. Description of the renal catheter :

Made of silk or linen, 50 cm. ($20\frac{1}{2}$ in.) long and from $1\frac{1}{2}$ to 3 mm. in diameter. Sizes, $1\frac{1}{2}$, $1\frac{3}{4}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, $2\frac{3}{4}$, and 3 mm.

Catheters are coated with shellac, twenty or thirty layers thick, sandpapered down, recoated, and dried in an oven.

Stylets are provided in a case for flaccid catheters.

Catheters are preserved in bulk, in large glass tubes, 3 cm. ($1\frac{1}{4}$ in.) in diameter and 60 cm. (24 in.) long, plugged at the end with cotton.

Catheters are sterilized by washing with warm water, then with a 1-to-1,000 bichloride solution, then again with warm water. They should be laid in an ice chest to be cooled an hour before using.

III. How to introduce the renal catheter :

After emptying the bladder a No. 8, 9, or 10 cystoscope is passed in to bring the ureteral orifice into view. Then, after dipping the point of the catheter in sterile boro-glyceride, the instrument is brought into position for introduction, over the operator's left shoulder for right ureter, or right shoulder for left ureter. Finally, with thumb and forefinger protected with sterilized finger stalls, the operator inserts the point of the catheter in the speculum, engages it in the ureteral orifice, and gently pushes it on up to the kidney. When the top of the renal pelvis is reached the catheter begins to coil in the bladder. From 12 to 14 cm. (5 or $5\frac{1}{2}$ in.) of the catheter is left outside, making the distance from external urethral orifice to top of pelvis of kidney about 36 cm. ($14\frac{1}{2}$ in.). The catheter holds about 1 c. c., and when the lumen

is filled the flow begins in intermittent drops from the normal kidney, in a steady stream from the obstructed pelvis.

A block of wood with an auger hole holds the tube while urine is running.

IV. Cases in which the renal catheter has been of use :

1. Abscess of upper left ureter.
2. Pyonephrosis with renal colic.
3. Pyelonephritis.
4. Hydronephrosis.
5. Pyelonephritis, kidney washed out.

DISCUSSION.

Dr. ETHERIDGE (of Chicago), referring to the details of an operation reported in Dr. Kelly's paper, inquired whether he had understood the doctor to say that he got no return from the left ureter before the operation, and got it afterward.

Dr. KELLY replied that the left ureter was completely obstructed and the left kidney was entirely destroyed. Nothing ever came from the left side; it was entirely functionless, as demonstrated by the catheter.

Dr. MUNDÉ (of New York) : Is it not possible to pass the catheter by the finger, particularly in this location, without the aid of the speculum? I was disappointed to see how very little I could see through it, even with the electric light.

Dr. GORDON (of Portland, Maine) inquired whether by the attempt to introduce the catheter in this way the patient is not much more liable to infection.

Dr. SKENE (of Brooklyn) : I only want to say that I have been contented to follow Dr. Kelly, and I think the great discovery which has been made in this provision to examine the bladder and the ureters, renders it so much more simple. I can not understand why it took him so long to find out so valuable and simple an improvement. It only goes to show that all good things are very simple, and we always say : "Why didn't we think of this sooner?" I have found that, in addition to the examination of the bladder and ureters by this Kelly method, the catheterizing of the ureter has become much more simple; and many of us who made poor work of it by the old method can, I think, succeed now many times. The trouble is that the operator hardly sees a sufficient number of the cases to become expert in those examinations. I may be all wrong, but there is one point I would like to make, and that is in reference

to making sure that you are not contaminating a healthy ureter or a healthy kidney in the examinations. I am sure no one can add anything to the aseptic and antiseptic care which Dr. Kelly has taken and so completely described ; but I have found, not the difficulty of keeping the instrument clean, but in all those conditions which will insure a certain amount of septic material in the bladder at the time of the exploration, where you have one healthy ureter or kidney and another one diseased, the difficulty has been to keep the healthy ureter perfectly free, so that you will not have septic material from the bladder into it. I did not hear the whole of the doctor's paper, and if he gave any account as to how to do that I wish he would repeat it ; if not, I may say that in addition to thoroughly washing out the bladder, which is not sufficient, when the ureter is exposed I not only bathe the latter portion around the mouth of the ureter, but I have also washed it out so that I would be sure not to carry in any septic material.

Dr. BACHE EMMET (of New York) : I have had no experience in the catheterization of the ureters. But I would like to ask Dr. Kelly if he will state the character discovered where the disease was on one side—if he has found the other one invariably healthy, or to what degree he may have found it involved. Also if he will state, where such disease existed, whether he has found on the comparatively good side an increase in the functions. It is exceedingly interesting to hear the details of this work, and it will no doubt lead to a clearing up of many cases in which we felt that perhaps disease of the pelvic organs was entirely at fault.

Dr. McLAREN (of St. Paul) : I would say that although my own experience has been very slight, I have never had any trouble ; it has only been necessary to take a few moments to expose and catheterize both the ureters through Dr. Kelly's speculum, and it has given me great satisfaction. I have never known, however, of this new long catheter which the doctor has shown to us to-day. I always used a short silver one.

Dr. BALDY (of Philadelphia) : I would like to emphasize the fact that the light is a most important point ; with a good light anybody can do it readily with a slight amount of practice, while with a poor light the best man will fail. The gentlemen who do fail probably do so on account of the light.

The PRESIDENT : My interest in ureteral work has run in rather a different direction from Dr. Kelly's, and has been mostly on the medical side rather than on the surgical, although I have used the catheter

and speculum to a considerable extent. I have had no experience with the long catheter that Dr. Kelly has spoken of to-day, so that I am not able to add anything to the discussion. It is a matter of very great importance, and I think we are in considerable debt to Dr. Kelly for having brought it before us to-day.

Dr. KELLY (in closing) said: I would like to demonstrate some of my cases for Dr. Mundé before he leaves. The new way is so much simpler that no man will go back to the old way who has tried it. In reply to the question of Dr. Gordon, I would say that I have never seen any ill consequences follow. The utmost has been increase of ureteral fever—quite a high fever—lasting two or three days. The patient got over it. As to the light, an important point is this: a strong light and a good-sized mirror with rather a wide field so that you may move your head a little and still have light on the bladder. Then you should have as little angle as possible between the light to the mirror and the light from the mirror to the bladder. If you have a big angle it is exceedingly difficult to handle. I have often used sunlight, but of course you can not always get it.

If this matter will have any historical interest, I would like to say one brief word about my New York experience. I felt very unhappy in not being able to catheterize the ureters, but felt that the gentlemen there did not quite appreciate what I had been able to show in examining the bladder. All the interest seemed to be concentrated on the ureters, and I went away thinking they had lost sight of the extremely important point of being able to look at the bladder. The other was a minor point.

As to the catheter, the metal catheters are very useful, but even for draining the ureter the soft, flexible catheters are going to be used. They are about thirty centimetres long and are easily put in, and you turn the patient over without any danger of it coming out, and without any fear of her hurting herself by pressure on the catheter, as in the case of the metal.

As to the relative disease of the two sides, that has been very variable. I have found in many instances the other kidneys doing an excessive work and perfectly sound, and I think we are inclined to overestimate and to magnify the disease on the other side. When patients die of renal disease we invariably are astounded that they have been able to live so long with disease of one or both kidneys.

As to the aseptic technique, that ought to be emphasized. It was not part of my paper, so I did not go into it in the detail I would have liked to. There were two loopholes left in the references I made, and

they were these : The renal orifice should be cleansed off with some boric-acid solution. The great point of failure from contamination is the speculum itself. It is not sterile, and to avoid that I run in a little sterile tube through the speculum and pass the catheter through the tube and wash that off. In all other respects the technique as briefly laid down I think is complete, and obviates any danger of infection.

FURTHER EXPERIENCE AND OBSERVATIONS IN HYS- TERECTOMY FOR UTERINE FIBROIDS.

BY S. C. GORDON, M. D., PORTLAND, ME.

See page 649. Discussion was postponed until after the reading of Dr. Emmet's paper.

THE USE OF TRACTION AND MORCELLATION FOR THE REMOVAL OF FIBROIDS VERSUS HYS- TERECTOMY.

BY THOMAS ADDIS EMMET, M. D., NEW YORK.

See page 655.

DISCUSSION.

Dr. WILLIAM M. POLK (of New York) : It is a very great honor, Mr. President, to be called upon to open the discussion upon such a subject and introduced by Dr. Emmet, who has been, as we all know, one of the fathers of our Society, and whom we all love to follow. At the same time the task which is presented to me seems to cover pretty much the whole range of dealing with masses of this kind, for the reason that I understand Dr. Gordon boldly announces the proposition that all fibroid tumors, no matter of what kind or character, should be removed ; and Dr. Emmet limits his paper largely to the treatment of the submucous variety of the growths, and at the same time takes decided issue with Dr. Gordon as to the propriety of the procedure which he advocates. This, Mr. President, places upon the shoulders of one occupying my position the task of endeavoring to reconcile the conditions which apparently exist here.

Dr. GORDON : In the last part of my paper I say that in all cases which can be removed easily and safely by the vagina, I advocate that procedure.

Dr. POLK : He evidently thinks that I mean to spring at once into the vaginal route. There are certain other things to be said in reference to the doctor's position which are a proper preface to the suggestion which he has made. I think that Dr. Gordon is unfair to the gentlemen represented by Dr. Mundé, who took issue several years ago with this wholesale hysterectomy, in that they then argued from partial statistics, whereas the doctor has statistics before him. The complete success of hysterectomy has enabled him to say to these gentlemen that they prophesied wrong. I think no one will take issue with Dr. Gordon's position, so far as the question of mere mortality is concerned, because it is settled that fibroid tumors *can* be removed without killing the patients. I do not think it was necessary to limit your mortality to three per cent. ; you can make it one half of one per cent. if you choose. If you carefully select your cases and apply to the patients the same principle that you apply to the selection of the cases in general surgery, the mortality will amount to practically *nil*. I would like just here to say a word in reference to certain remarks which have been made by Dr. Emmet. We all know perfectly well that he speaks with a very wide experience, and yet I regret to say that we are compelled to differ with him in reference to the advisability of operating on fibroid disease, for the reason that we have all of us found in our own experience cases which have been so immeasurably benefited by removal that they compensate us for the failures which occasionally come. Therefore I think it is wrong for this distinguished leader to take the apparently uncompromising position which he has done in reference to the non-operative treatment of cases of this kind. Undoubtedly there are many cases in which the element of pain alone will justify us, as, for instance, a woman with small uteri, in whom the element of pain alone is such as to make it our duty to remove that growth, and many of us have done so, and have given that woman a peace and quiet and health which she never dreamed of until some such procedure was resorted to. I could go on and enumerate instance after instance in contradiction of the position which Dr. Emmet has taken, which, from our standpoint, justifies us in proceeding as we expect to do. Then comes the question as to whether these people that are operated upon have bad results. Many of them do, but the majority do not, and surely the after-result is no worse than that which was open to them in consequence of the continuance of their conditions. Then there is another thing to be borne in mind : This whole business is, and has been, in a state of transition. We have had to advocate this procedure in the face of a

mortality that practically excluded it from the realm of surgical procedure. Of course mistakes were committed. Of course cases were operated on that might better have been left alone, but this is simply the experience of every surgical procedure that advances to success; it is by that means alone that we are able to get at the real substance of the situation. Prophecies were in order two years ago when our friend here suggested that we would be doing all that we seem now to be doing; but I will not follow his example, and simply say that the results which he anticipated and prophesied fully justify every word which I have uttered here to-day. One other point is to be taken into consideration in reference to the method of dealing with these things, and that is, Have we solved the question by the suprapubic method? I have witnessed a number of these operations during the past year, so that in a measure I am able to speak from experience, and I say that we, in our endeavor to arrive at a correct method, have neglected too much the intrapubic route of approach; that in that direction lies a possibility of relief and of success which may possibly be reached by the suprapubic method, but which can be reached better the other way. I see gentlemen here to-day whom I know are prepared to take strong issue on this ground, and I hope they will do it, because it is only by means of sharp, direct, aggressive discussion that we can arrive at truth in these matters; and I wish them to understand that while this intrapubic method may sweep from beneath them certain pet theories in reference to this or that portion of the cervix, they nevertheless should give it their unbiased and their candid consideration. All I can say is this: That when you find a woman having a fibroid tumor which is reasonably soft, even though it may be larger than a six months' pregnancy, you can remove that from the vagina, so far as your patient is concerned, with better results than you could remove it from above. The problem which lies before this Society is during the next few years to thresh over this ground and ascertain in which direction lies safety for the patient. Certain classes can be dealt with best from above; other classes best from below. In conclusion, let me say that while this has taken me away no little distance from the ground taken by Dr. Emmet, I wish the doctor to understand that no one appreciates or values the work which he did in the direction of morcellation more than myself. I am sorry, however, that he did not extend it to include the uterus as a whole, and I suppose he would have done so had he not put himself in a position of direct opposition to the removal of the organ as a whole. But the method which he advocated in the removal of sub-

mucous fibroids of the uterus has merely been extended by some of these gentlemen to the uterus as a whole. And if he can bring himself to advocate the removal of the uterus as a whole, the method which he produced, the method which he advocated is the method we should all follow.

Dr. BALDY : Dr. Polk has so thoroughly covered the ground that there are only one or two points worth while to dwell upon, and that is the question of the advisability of the operation of total extirpation, and the results following it. There is no question whatever, as has been stated, that a certain set of symptoms are substituted for another set of symptoms where hysterectomy has been performed, but it behooves us to study carefully and understand the symptoms which are substituted, and what are the chances of relieving those symptoms. We all know that the removal of the uterus and appendages simply means that the woman will suffer from symptoms of the menopause, and time will cure them whether we can cure them or not. Therefore the substitution of a class of symptoms which are sure in the future to be cured by Nature herself, it seems to me, is a very great desideratum, even were there nothing else to be gained. But it has been brought out by Dr. Polk that unquestionably the patients are relieved from their original symptoms, and the relief is so great that they hardly realize they are the same women within a few weeks after the operation has been performed. If we are to adopt the advice given by our distinguished fellow, and allow these tumors to go on and on, many of us will be forced to do what I was forced to do yesterday—back out from the operation at the table and allow the patient to go with the certainty of death within a year or a year and a half; a patient who ten years ago had this same advice to “wait,” when the tumor could have been removed at that time with little or no difficulty. That woman has before her at most one or two years of life, and if she were free of the tumor she could in the natural course expect twenty or thirty years. It seems to me that if we are going to put our patient in that position we are going in the wrong direction for the safety of our patients and their best interests. I can only say, as far as the stand taken by Dr. Gordon is concerned, and as to the prophecies made by him two years ago, that my own experience upholds him *in toto*.

Dr. MUNDÉ : I think that the reference made to me by Dr. Gordon excuses my taking part in the subject. Dr. Gordon two years ago made a proposition which he has stated again to-day, which I then opposed on the same grounds that I oppose it to-day—that I did

not think that the removal of every uterus containing a fibroid, no matter now small, should be undertaken so soon as that fibroid could be detected. I stand by that proposition to-day. I do not go as far as Dr. Emmet does. I am not as conservative as Dr. Emmet. I am supposed to be a professional laparotomist, therefore there is no reason why I should not take out the uterus for fibroid or ovarian tumor if I thought it was the proper thing to do. But I do not believe from my own experience—and my experience is not a matter of yesterday any more than Dr. Gordon's—I do not believe that I am justified in holding a different position from that which I do hold—namely, that no uterine fibroid should be removed simply because it is a uterine fibroid unless it produces symptoms, either by its pressure, by its rapid growth, by its producing hæmorrhages which can not be controlled by medicine, by ligation, by curetting, or by electricity even, or else in which the patient insists on having it removed. Dr. Baldy says very truly that in ten years the fibroid which amounts to nothing may be a large fibroma cyst and kill the patient; but you must keep the patient under observation, and if you find the change in the fibroid warrants the operation, do it. Within the last three months I have done it three times by the abdominal operation. I certainly felt justified in doing it. One of the cases I refused three years ago; I did it for rapid growth. Another I operated on last Wednesday for rapid growth. As far as that goes, I do not see but that the majority of the gentlemen who spoke at the meeting two years ago, after Dr. Gordon's paper, agree substantially with me that none of them admit that every uterus must be removed because it has a fibroid. I do not deny the results of the operation. But I think an unnecessary operation should never be performed, no matter whether every patient recovers from it or not. I would say as to the removal by vagina or morcellation that I removed a tumor weighing two pounds from a virgin, situated in the lower segment of the uterus, by that method, and removed thirty-four distinct fibroids by morcellation. I do not think there is any question about it that every fibroid tumor that can be removed by the vagina should be so removed. I do not think that there is a comparison between vaginal hysterectomy by traction and suprapubic. They have certainly never removed such cases as Dr. Emmet has done by the suprapubic method.

Dr. HOWARD KELLY : I agree with what Dr. Mundé has said, and disagree entirely from Dr. Gordon's stand. I have seen fibroids in a few instances disappear while under observation. And I operated on a case a few days ago where it was not bigger than my finger. It was

in the uterus, and an inflammatory case. I remember a case treated twenty-three years ago, with a large interstitial fibroid, which Dr. Skene relieved and reduced the size of. She came to me a year or two later suffering greatly from pressure. The tumor was a large pediculated one, fifty-nine pounds in weight, the pedicle being about one and a half or two inches in diameter. I operated, removing the tumor easily.

I would operate in all cases in which the hæmorrhage is persistent, in which the pain is constant and can not be relieved, in which the tumor is growing rapidly, and in which the tumor is already so large as to cause inconvenience. I would also do a hysteromyomectomy in cases where the patient is persistently nervous and frightened at her condition and needs an operation on this account.

My own plan of operation is, I believe, the most rapid. After making the abdominal incision of sufficient length and delivering the tumor, I commence on the side which is easiest exposed, tie the ovarian vessels, clamp on the uterine side, and cut between. The round ligament is treated in the same way. The peritonæum is then cut across the front of the uterus and pushed down, freeing the bladder. The broad ligament is now separated down to the cervix, and the uterine vessels located and tied; uterus cut across and uterine vessels on opposite side clamped. The mass is then rolled up and out, the round ligament caught, clamped, and cut; finally, the ovarian vessels located, clamped, and cut, and the whole mass is freed, the cervical stump closed with silkworm gut, the bladder and peritonæum sutured over the whole, and the abdomen closed. I have thus enucleated in 4, 3, and 3.25 minutes.

Dr. SUTTON (of Pittsburg): There is one criticism which I will make bold to offer in regard to both these papers. It is in reference to a pathological point. I believe that it is not right from a surgical standpoint to talk of a myoma and a fibroma as the same thing. They are different tumors. There is as much difference between a myoma and a fibroma as there is between an adenoma and an angioma. It is not right to put these tumors in the same classification in a discussion. Those of us who for twenty-eight or thirty years have watched the progress of these tumors, watched their daily life, their rise and their decline, have seen some of them go away. Now, what class has gone away? Has it been the myoma or the fibroma? I say that no man in this body has ever seen a true fibroid tumor disappear at any change in a woman's life, but he has seen, doubtless, a myoma disappear. Now, in estimating the necessity of surgical relief for the woman one

thing that must be determined is whether she is suffering from a fibroma, or whether she is suffering from a myoma. I indorse Dr. Mundé's and Dr. Kelly's remarks in regard to the necessity for an operation on general principles. I would as soon think of cutting off a woman's leg for every affection of the knee joint as I would of taking out her uterus in every instance of tumor, whether it be a myoma or a fibroma. But we must discriminate between those two classes of growths in these discussions. It has been stated that every case is a law unto itself; it is because the tumors differ in pathological construction, and it is because of the great variety of symptoms which these things get up. There are two grounds for operating on a woman with a large uterine tumor interfering with her, which have not been mentioned. A woman who is in good circumstances, and who is being taken care of, can nurse a troublesome tumor, and she may avoid the operation; but the woman who must make her living, who must have that tumor out or go to the poorhouse, is entitled to the operation. Again, a woman may fall pregnant with a tumor, which will necessitate an operation. Then, again, I object to this expression of "selecting" cases. If a man is to select his cases he will take the uncomplicated and the easy ones, but the true surgeon's cases are selected for him. Now, I want to show two tumors here which illustrate another point: A woman may get pregnant with a fibroma or myoma, and the necessity may arise to relieve her. Here is a pregnant uterus, with a fœtus in it of about ten or twelve weeks, and there is the myoma which necessitated the relief. I removed the uterus with the myoma, and the patient is well. (Exhibits specimen.) A few days later a woman bearing this specimen came in. She was three and a half months pregnant. I can not conceive of how it was possible to avoid operation in either of these cases.

Dr. MCGONEGAL (of San Francisco): I have sometimes been able to enucleate these fibroid tumors from above as well as from below. When we can enucleate them from above it occurs to me that that is the correct practice. My success in that has been very good, but my experience has not been very great. There is, again, a class of tumors where the tumor extends into the broad ligaments, where it is almost impossible to remove it without removal of the uterus with the tumor. In those cases it seems to me to be necessary to do the hysterectomy at the same time you take the fibroid out. There is another class where the tumor can be taken out and the uterus allowed to remain. I submit that if that tumor can be taken out and if the ovaries and Fallopian tubes are in a healthy condition, it is our duty to take out

the tumor and leave the uterus, ovaries, and Fallopian tubes. That is a well-established operation.

Dr. DUDLEY (of New York) : I only want to call attention to a few points. One is the use of catgut in hysterectomy, and I want to add my experience to that of the gentleman who has advocated it, and to say that I believe that the reason why those gentlemen who do not want to use it failed, is because they did not use it in the proper manner. I have watched the use of catgut by a number of my fellow-operators, and have almost invariably seen them remove the catgut from the bottle in which it was sterilized and place it in water and soak it up, so to speak, thereby undoing the very process of aseptic preparation done by the manufacturer. It was the remark of Dr. Emmet that he believed that the majority of fibroid tumors could be brought to a submucous position. I want to say that my experience has been the reverse. I believe that, taken as a whole, the majority of growths within the uterine tissues are and will become subperitoneal. There is another point, that of dilatation of the uterus and separation, for the removal of these growths. I believe that sponge tents are most injurious and dangerous applications to be put into the uterus, simply from the fact that you do not know when or where or how they are prepared ; also the difficulty of removing them. I say that fibroids not too large, weighing three or four ounces, can be removed from a uterus that has not been previously dilated by this method, which in my hands has not been dangerous—that of cutting the cervical canal on both sides at once, opening the uterus sufficiently to get in two fingers, and with the uterus open to that extent, the small serous fibroids of quite a large cyst can be removed without the danger of sepsis, and you can do so all at once. When the operation is finished the cervix can be immediately sewed up. One other point and I am done. Such discussions as we have had to-day are what we all claim lead up to a higher education. Every man has his pet theory and his experience, and he gives it to us, and the thing is for us to take the whole and apply it to our own individual cases. We know that fibroid tumors are treated by ligatures, by ligating the uterine arteries, by hysterectomy complete and suprapubic, by morcellation. Of the five methods in our experience we can apply one or the other, or a combination, in the cases that come to us.

Where we have a dangerous case, where the tumor is a large one, and it is claimed by some of our fellows that ligation will fix it, let us do that. If the ligation of uterine arteries will reduce a large tumor and then halve its size so that we can remove it by hysterectomy

two months later, it is our duty to use the combination method. For that reason I advocate conservatism rather than the radical operation in all cases.

Dr. SKENE: While fully satisfied that there is a very large field for Dr. Emmet's method of treating uterine fibroids, just as I believe that there is quite a large field for abdominal hysterectomy, it does not seem to me that we should address ourselves to discussing the question as to whether one should operate this way or that. We all know the history of this kind of uterus, and know its tendency to recover in the vast majority of cases. That, I think, is proved beyond any doubt, because the death-rate from uterine fibroma was not any greater than where done by hysterectomy for relief. We all know the natural tendency for recovery. Those that are brought within the reach of the surgeon by becoming submucous I know can be managed and cured in the highest sense of the term by Dr. Emmet's method. It was my fortune to become acquainted with one of the earliest cases and one of the worst cases that he had, I believe. She was almost bloodless, and the case was left to the care of a man who did not know he could not manage it. She was sent to Dr. Emmet, and she lived for twenty years after the removal of a very large fibroid that was placing her life in danger. By this method she lived, and is perfectly well, and performed all her functions absolutely. I have operated by that method over a hundred times, and with a death-rate of one per cent., and that occurred in a patient who was septic before I attempted the operation, and was before the days of abdominal hysterectomy. I presume that was a case where it would have been infinitely better had I performed abdominal hysterectomy. This leads me to say that it is not a question of the justifiability of this or that operation, but of adaptation of the best operation to a given condition, and it seems to me unjust to deprive a woman of all her sexual organs in order to try to cure her of a small uterine fibroid, and where she could be certainly cured by Dr. Emmet's operation. It seems to me that one would be absurdity and the other first-class surgery. When you remove the uterus and ovaries for the cure of a fibroid I do not believe the patient is very often cured. Dr. Gordon said he had operated a great many times, and never regretted it. I wish I could hear what his patients had to say. I believe that patients deprived of the uterus and ovaries suffer more than they do with the fibroid. Many of mine do, anyway. We should bear those points in mind, then, and also the fact that was brought to your notice by Dr. McGonegal in regard to the operation which can be

performed in a great many of these subperitoneal cases. The case referred to by Dr. Kelly was a most interesting one, where abdominal hysterectomy was a triumph of science and of surgery that I am proud to know about. She was under my care, and while I used electricity, it was because I could not persuade her to let me remove it. Dr. Kelly persuaded her, and succeeded in removing it. I believe the weight of the tumor was fifty-nine pounds.

Dr. ENGLEMAN (of Boston) : It seems to me that it is not a question of method, but we have extreme views enunciated here, and I wish to understand whether there are fellows of this Society who advocate hysterectomy, no matter in what form, suprapubic or vaginal, for every fibroid. Let the line be drawn straight. The paper of Dr. Gordon sounded very much in that direction. I have not had the experience of Dr. Polk, Dr. Wylie, and others, but I have had a large experience in disappearing tumors. I should like to be able to diagnose, as Dr. Sutton suggests, whether it be a fibroma. I know that there are a large number of uterine tumors which have a tendency to malignant degeneration, and others to suppurative degeneration, and others to a metamorphosis. I have seen a great many tumors disappear, some without treatment and some with treatment, and I have seen symptoms of the most striking kind relieved, especially by electricity. It is not the size of a tumor. I agree with Dr. Kelly and Dr. Mundé : it is the symptoms that should be relieved. But is it always hysterectomy? I remember seeing a tumor disappear in St. Louis which Dr. Sims said was one of the largest he had ever seen ; it was in a woman of about forty ; she was doing her work as superintendent of an institution. That was before the antiseptic days, and we tried various injections of iron, etc., and I presume did no good, but the tumor slowly disappeared, until the woman who had had this enormous abdomen walked the streets. I have seen them disappear under surgery and under electricity, and without treatment. But I can not make a diagnosis and say which tumor will disappear. But why should we remove every fibroid that may grow in twenty or thirty years? The point is as to the symptoms, it seems to me, and I should not like to see the fellows of this Society put themselves on record as performing hysterectomy, no matter by what method, for every fibroid or tumor of the uterus.

Dr. MONTGOMERY (of Philadelphia) : I have listened with a great deal of interest to these two papers, and feel that the best ground possible is between them. I should not feel like advocating the ground Dr. Gordon has taken. If it is a subperitoneal tumor it may be enu-

cleated and myomectomy performed, leaving still an active function of the uterus. The doctor spoke of one case in which he opened an abdomen with a view of doing ventrofixation, and found fibroids which apparently had not been known prior to the performance of the operation. He changed his operation from ventrofixation to removal of the uterus. I must say that if we did that in the practice in Philadelphia, I fear we would soon be brought into Court if we removed organs considered so valuable as the uterus, after commencing another operation. Indeed, I have some friends who are threatened with a suit for the removal of both ovaries and tubes of a woman, although they contained a large collection of pus, and although the condition was made known to the patient prior to the operation.

Dr. HOWARD (of Baltimore): Some years ago, being in the city of New York at the Woman's Hospital, I saw Dr. Emmet perform his operation as depicted in his book on *Gynecology*. That was the first time I had ever seen or heard of it. Some twelve or fifteen years ago a lady, some forty-seven years of age, came to me with a large fibroid tumor. She was as pale almost as a cadaver, and bleeding very freely. I did not think she was in a condition to submit to any serious operation whatever, but for the purpose of stopping the hæmorrhage I incised the cervix on either side very deeply and gave her hypodermics of morphine to control her excessive pain. To my great surprise a part of the tumor commenced to present at the os externally. It extended above the umbilicus, and felt hard. I had no thought of attempting to do anything more than relieve the hæmorrhage, but the uterus commenced to contract, and finally projected into the vagina a large myoma; I caught that and pulled it down, and attempted to do the operation which Dr. Emmet has described. I will not go into detail about it. Little by little as it came down I got it, until the whole of it was delivered in that manner. She got perfectly well and to-day rejoices in good health. About five years ago a lady thirty-six years of age came to my office with a fibroid. It extended up a little above the umbilicus. I removed the ovaries in that case for the purpose of arresting the hæmorrhage. The hæmorrhage, however, did not cease. She went home, and returned to me some three or four months after, stating that she had been bleeding ever since the operation. Upon examination, I found a fibroid projection over the fundus as large, perhaps, as my two hands together. I sent her down to the hospital of the University of Maryland, took it off, and put the uterus back into position; she got perfectly well. About three years ago a lady applied to me who had been bleeding for some

two or three years. The uterus seemed enlarged and retroverted. I put the uterus in position, dilated, and curetted. I noticed that posteriorly there seemed to be a projection. The hæmorrhage, however, did not cease. It continued, and with a great deal of pain, which had not existed to any great extent before. One morning on examining her I found something projecting through the os externally. I then saw what it was. I said: "Let her alone and in a few days it will drop out of itself." A few days after it did. She got perfectly well.

Dr. BUCKMASTER (University of Virginia): There is a very decidedly practical point in connection with the subject, and that is that we should take proper means to make a diagnosis. In many cases no man can make a diagnosis of the fibroid without a sufficient dilatation of the os. Wherefore it is my opinion that a man does not do justice to his case who removes a fibroid and has not explored thoroughly the uterine cavity.

The safety of the operation is so great that when it is properly done I believe the mortality would be *nil*. I have seen patients in such a bloodless condition that they could not be raised from the bed without fainting, where a fibroid tumor was removed weighing four pounds, and they recovered. We all know that there are other pathological conditions frequently associated with the fibroid, and in many of the cases where death has ensued an autopsy has not been made, and the mortality statistics are not of very high value. In order to show the importance of exploring the cavity of the uterus, about two years ago a gentleman brought a uterus to the New York Obstetrical Society which contained a small fibroid tumor. This tumor had been removed by abdominal section. In examining the specimen as it was passed about, I found it was perfectly easy to separate the tumor from the uterine wall by the finger, the union between the two was so slight. Now, in looking at quite a number of pathological specimens, I believe that the union is often very slight if you only find the proper point of separation.

Dr. GOFFE (of New York): One point which has not been brought out this morning is that of the age of the patient, and it is an important one. I have now under my observation a number of patients with fibroid tumors, the women being between the ages of forty and forty-five years. I have curetted some of them and am watching them all carefully, and I believe that without any very great degree of trouble I can nurse them through the period of the change of life. My experience is that the majority of these tumors either diminish or cease to give symptoms after the menopause. In the

case of a young woman thirty years of age you should take that into consideration.

Dr. GORDON (in closing) said : I wish to read the last page of my paper, which, because of the time limit, I did not before have an opportunity to finish. (Reads the page, concluding with the following sentence : "In conclusion, I can only say that further experience and careful observation justifies me in reasserting my belief, so strongly expressed two years ago, that in all cases where a woman *finds herself an invalid from a fibroid uterus* to the extent of seeking the advice of a surgeon, unless such tumor can safely and easily be removed *per vaginam* either by enucleation or morcellement, true conservative surgery demands hysterectomy, and in all my experience I have found the abdominal method by far the best one.") That is my position. I do not claim it should be done for *any* tumor that may occur. Furthermore, I agree fully with Dr. Emmet in removal of those cases of submucous fibroid that can be removed *per vaginam*. I have done a great many of them.

As to Dr. Sutton's statement as to poverty or wealth to determine whether we should remove fibroids, I think that has nothing to do with surgery whatever. I select no cases. I apply this invariable rule : that poor or rich, high or low, in whatever condition of life they may be, if they come to me suffering from a fibroid I advise hysterectomy unless I can remove it *per vaginam*. I find comparatively few cases of submucous fibroids. I simply did not wish to be misrepresented, and therefore I read the last page of my paper.

Dr. EMMET (in closing) : I am deficient in my knowledge of the English language to express fully my views. Not a gentleman, with the exception of Dr. Buckmaster, has touched upon the point of my paper at all. I have been for years misrepresented as being opposed to the operation for removal of the uterus. It is nonsense for any man to hold any such views. There is a certain class of cases in which every man must see at a glance that if anything is to be done, the uterus must be removed. The truth in almost every question lies in the middle ground. If there are a great many small fibroids the large tumor will always be crowded out in the peritonæum. If you have a single growth in the uterus it will invariably be pushed toward the uterine canal. But the main point is, let no man remove the uterus until he has dilated the canal, put his finger into it, and formed some idea of the position of that tumor. No man can state beforehand what can be done, and in a large number of those cases I hold that instead of removing the uterus offhand at the beginning,

you can get those tumors out and the woman will remain well afterward. I have seen women who have borne children after having fibroids removed which weighed pounds, and they have been perfectly well afterward, while if you had followed the rule that is being taught by so many to-day, the uterus would have been taken out. All I ask is to give a reasonable time to attempt to dilate the uterus and see whether it is possible to remove it in that way. If it can not, of course there is a class of cases where you must remove the uterus. Whether you do it by the abdomen or vagina is of course an open question.

CATGUT FOR LIGATION OF THE PEDICLE.

BY ARCHIBALD McLAREN, M. D., ST. PAUL, MINN.

See page 675.

DISCUSSION.

Dr. DUDLEY (of New York) : Catgut can be used, sir, with as much freedom from bad results as any other suture or ligature. I have been using it since 1885. I have used it a great many times in the pelvis in doing all methods of operation that have come within my work—extra-uterine pregnancy, fibroids, ovarian cysts of all sizes—and I have yet to see suppuration follow as a result of the introduction of catgut. In fact, it is not my custom to have my operations followed by suppuration. I have abandoned any method of my own or any one else's in the preparation of cutgut. I leave it to those who are expert in the preparation of it. In my first cases of its use I did get cases of suppuration, and I laid it to my inability to thoroughly sterilize it. I find that it narrows itself down to the use of catgut prepared by one firm in New York—Lanmar & Nelson. They treat it by washing the fat from it, putting it into a solution of alcohol, and subjecting it to a temperature of 250°. All the catgut prepared by them is treated in this way, and I thoroughly believe it is aseptic, and that there is no risk to the patient. Four years ago I operated upon a physician's wife in New York city. It was a tubal case; I did not feel that I had knowledge enough of the use of catgut to risk it, and I used silk. About two months ago the doctor brought into my office, carefully stowed away in a little bottle, the silk I had put into his wife's broad ligament, she having passed it four years later in the act of urination. Such a thing as that would

never happen with catgut. I believe it should be used in continuous sutures ; I do not believe it is safe to use as an interrupted suture.

Dr. POLK : I would say that I believe the doctor is standing on the wrong platform. The possibility exists that I may not have made myself clear in the paragraph to which he refers, but what I had in my mind was the cutting of a ligature through a tube, which is by no means an uncommon action, as the doctor realizes, and the infection thereby. The recommendation there contained in reference to the entire elimination of the tube has only been strengthened by my further experience. The question of catgut *versus* silk, I presume, will be brought up from time to time. The question has been at issue from the beginning of the procedure, and I confess that I would hail with delight any process that would enable me to use catgut, but I am free to say that I can not get that encouragement from the results which I had hoped for, and I was still further dumbfounded when I would make two operations, in one using silk and one catgut, and the one where silk was used would not have suppuration, and the one where catgut was used would. The bacteriologist would say there was absolutely no germ in the catgut. I could not say what it was. The work I had done was equally good in both cases. I am compelled to reach the conclusion of Dr. Rice, who has about 12,000 patients in the various institutions with which he is connected ; his experience means something more than the ordinary run, and it is this : That you can not sterilize all catgut ; that there is some catgut which will always give you trouble, and you can not tell by examination which is good catgut and which is bad. I use it to as limited an extent as possible. We all recognize fully its great value, and would all drop silk immediately if we could see that we would not be caught in some bad predicament. I can not imagine anything more discouraging to a man than to set to work and feel conscious that he has fulfilled every detail, and then, on account of a miserable piece of catgut, not a couple of inches in extent, have the whole thing go to pieces. It is demoralizing. I operated on a woman and congratulated myself that I had a good case ; she died of sepsis, which the autopsy showed was the direct result of the catgut. All I can say is that our methods may be wrong, but they are much the same as those which the doctor has described, and I will say that I have got a number of the worst results possible with the very catgut that he has spoken of.

The PRESIDENT : Do you say that it was examined by the bacteriologist and no germ found in it ?

Dr. POLK : Yes, sir. And I got suppuration in the case where I used the catgut, and did not get it in that in which I used the silk. The methods were exactly the same in the two cases; you will have to take my word for that. I can only say that in these cases I pursued every element of precaution with a conscientious desire to do the best possible, and the result has been such as I have stated.

The PRESIDENT : I have been using it for ten or twelve years, and have probably left two or three thousand pieces in the abdomen. I can not say that I have ever seen any bad result which I could directly attribute to the catgut. Dr. Polk attributes this accident to the catgut. I have no doubt the operation was perfectly correct, but if the catgut was examined afterward, and found to be free from germs, it seems to me his deductions are wrong.

Dr. POLK : That depends entirely, Mr. President, on whether you confine yourself to the supposition that only a germ can produce suppuration.

Dr. KELLY : I have not dared to use catgut for over two years, because I lost three patients in which the best examination we could make seemed to show that the deaths were due to catgut. Unfortunately, none was left over to test it as has been described. I believe now that we have a means of sterilizing it, which raises it to a high temperature. I have been using very fine silk, and have had one case in which the silk has come out afterward.

Dr. McLAREN (in closing) said : I do not think that we can compare any other preparation of catgut with the one which I have proposed here, because they are unscientific, except by boiling in alcohol and water, which raises the temperature high enough to kill any germs. We know that you can carry along sources of cultures, and you may find something which has not been killed off by any other method of sterilization which has been used. But this preparation is founded upon scientific principles, and I believe will give the best results in all cases.

Adjourned.

Afternoon Session.

The President called the Society to order at 3 P. M.

THE PRESENT TREATMENT OF UTERINE
DISPLACEMENTS.

BY PAUL F. MUNDÉ, M. D., NEW YORK.

See page 691. Discussion was postponed until the other papers on this subject were read.

Abstract of a paper entitled

MY EXPERIENCE WITH VENTROFIXATION AND
ALEXANDER'S OPERATION.

BY A. LAPHORN SMITH, M. D., MONTREAL, CANADA.

That the author has only performed the Alexander operation twenty-one times and ventrofixation twenty-eight times in the last five years, while during that time he has attended many hundred cases of mal-position, makes it evident that he only considers a small number of them as being fit subjects for operative treatment. Many cases have come before his notice in which the retroversion was discovered incidentally and caused no symptoms whatever. Others suffering from slight symptoms were easily cured simply by replacing the displaced organ, and by removing the cause which brought the condition about. Others again failed to be cured by such simple measures, and required the prolonged use of the tampon, and others of the pessary. It was only in those cases which were not benefited by these means that he resorted to the operation. If there are any who doubt the necessity of treating this condition at all, he would remind them that a woman with this disease sometimes suffers so acutely and constantly as to be really an object of pity.

Not only is the circulation of the uterus greatly interfered with by the kinking of the vessels in the broad ligaments, and by the pressure of the fundus on the uterine veins, but also the bladder is frequently irritated by the pressure of the cervix on its neck, and the bowel also by the pressure of the heavy fundus on the rectum, which is in some cases sufficient to completely obstruct all passage through the bowel, the patient constantly experiencing a feeling of tenesmus or bearing

down, the obstacle to defecation being present even when the bowels are in a liquid condition. But the worst symptoms perhaps are the reflex ones caused by the pressure of the uterus on the branches of the great sympathetic nerve, leading to distention and sluggishness of the bowels, dyspepsia, palpitation of the heart, disorders of vision, and headaches. Neither must it be forgotten that the retroverted uterus and ovaries are often so painful as to offer an insurmountable barrier to sexual intercourse.

Of all the operations which the author has ever performed, the one which offers the greatest satisfaction is ventrofixation of the uterus. The satisfaction comes from three distinct sources: First, from its effectiveness in accomplishing the object desired; second, in accomplishing it with the smallest possible risk to the patient; and third, in effecting it with the greatest possible ease to the operator.

Considering each of these points in detail: First, its efficiency. When a woman consults us for retroversion of the uterus or prolapse, or even for procidentia (using this term to mean falling of the womb in which the organ projects more or less from the vulva), we may treat her in several different ways. We may advise her to wear a tight T or perineal bandage. We may replace it and keep it up by means of cotton or woollen pads, which are, however, very unsatisfactory for the reason that the vulva in many cases is large and relaxed; the tampon will only remain in for a short time, dropping out either while walking or at the next effort at defecation. This method never cures, and the patient sooner or later becomes tired of it and abandons it altogether. The next best treatment is the pessary. The pessary has many objections: First of all, if the ovaries and tubes are inflamed and bound down by adhesions, the pessary can not be borne. Second, even if there were no inflammation or adhesions and the uterus and appendages were freely movable, the vaginal outlet, as a rule, is too large to prevent the pessary from coming out, or, if not already so, the pressure exercised by the pessary will distend it until it drops out, and then a larger and larger one must be introduced. Even when the vulva is small, as in virgins, and the pessary can be borne by the patient, she must come at regular intervals to the physician's office to have it cleansed and reintroduced; it is more or less a constant source of irritation and is apt to cause leucorrhœa, which in many cases he has seen become purulent. In other cases it becomes incrustated with phosphatic deposits, rendering it exceedingly irritating; cases are even on record where the pessary when not regularly attended to has ulcerated through the vaginal wall until malignant disease has been

set up, and in other cases it has worked its way clear through the vagina to the abdominal cavity, whence it has been removed by abdominal section. Third, the pessary interferes more or less with sexual intercourse. To give the pessary its due, however, we must admit that a few cases of retroversion and prolapse are cured after three months' to a year's use of it. It is most useful in temporary cases, such as when the womb falls, because it has become pregnant and heavy; in such cases the pessary is useful to hold it up until the end of the third month, after which by its size it will be prevented from falling backward or descending. One of the objections to the pessary can be remedied by reducing the size of the vaginal outlet by performing anterior and posterior colporrhaphy, or, in other words, sewing up the lacerated perinæum and reducing the area of the anterior vaginal wall by means of Stoltz' operation. Some have thought to cure the prolapse by this operation alone, but now all operators agree, especially Martin, of Berlin, that no matter how much the vagina may be narrowed, even to the extent of closing it up altogether, as by Lefort's operation, which of course is only applicable to old women, the uterus will still come down and present at the vulva. By at the same time dilating, curetting, and repairing a lacerated cervix, or amputating it if there is much cystic disease, the weight of the organ is reduced so much that the weak and relaxed ligaments are sometimes able to hold it up, but more often it drops again in spite of everything. There remain three other procedures which are effective and which he mentions in the order of their gravity: First, removal of the uterus by the abdomen or by the vagina; second, Alexander's operation; and third, ventrofixation.

Although the removal of the retroverted or prolapsed uterus by the vagina is a much safer operation than when it is performed for a cancer or fibroids, owing to the facility with which it may be brought down and all bleeding points seen and secured, and also to the greater certainty of accomplishing sepsis, yet we are hardly justified in resorting to any operation in which the danger is so much greater than is the simple fastening of the uterus to the abdominal wall; while when the appendages are diseased and the uterus is firmly attached with them to the sacrum or rectum, the abdominal route is much more rational than the vaginal one. Even the authors of the latter method—Ségond, Richelot, and Péan—admit that they are frequently obliged to leave portions of the diseased structures adherent to the intestines. But even when there are no adhesions, is removal of the uterus and appendages always effective for curing prolapse of

the pelvic contents? True, the uterus when removed can no longer prolapse; but the uterus is not the only organ there; even after its removal the woman may have prolapse of the pelvic floor. But with ventrofixation not only is the entire uterus preserved and held up, but also the bladder, vagina, and small intestines are equally supported.

When we compare ventrofixation with Alexander's operation as regards efficiency, ventrofixation has one great advantage. Alexander's operation is a complete failure in all cases in which the uterus or even the ovaries and tubes are adherent. Sometimes the uterus appears movable, and yet the mobility is very limited, and when we attempt to draw the fundus up to the abdominal wall by means of the round ligaments the latter will break sooner than the adhesions will. These adhesions, which anchor the uterus, explain some of the frequent failures of Alexander operations. When there were no adhesions he has found Alexander operations very effective in holding up the uterus. He has never had hernia after it, and he has only known of one relapse out of twenty-one cases.

One objection to Alexander operations is that the round muscles, when they have not contracted for a long time, become fatty and break when pulled upon. There is another objection to the Alexander operation which does not apply to ventrofixation, and that is the pain and numbness of the groins and labia due to the severing of the nerve running along the round ligaments.

Nor, if we look at the two operations of ventrofixation and Alexander from a standpoint of the risk to the patient, the odds are in favor of Alexander's operation. If there are no adhesions of the uterus, and the ovaries and tubes are not attached, the mere opening of the abdomen and fixation of the uterus under the rigorous aseptic precaution which we now employ is absolutely devoid of danger; while if there are adhesions it is ever so much safer to detach them with the fingers in the abdomen than to replace the uterus with the sound. At least one case has come to his knowledge of death from this procedure. Neither is Alexander's operation entirely devoid of risk. A number of cases have come to his knowledge in which single or double inguinal hernia has followed; and a great many cases have been followed by suppuration. A few cases of death even have been recorded as having followed the Alexander operation. It must be distinctly understood that when ventrofixation is performed for removal of pus-tubes or tearing away of adherent ovaries, it then assumes the mortality of the larger operation, which is greater or less according to who the operator is.

When we compare the operation from the point of view of the ease with which it can be performed, Alexander's operation is not in the discussion ; it is *hors de combat*.

If the uterus were always free from adhesions when it appears so, and the round muscles always healthy, red, fleshy, and fairly strong bodies, there would be no difficulty in finding them and drawing them out, but, as a rule, in chronic cases of retroversion the muscle has not contracted for weeks, months, or years ; the inevitable result is, of course, fatty degeneration. Ventrofixation, on the contrary, is extremely easy ; it can frequently be performed in from ten to fifteen minutes, with an expenditure of less than half an ounce of A. C. E. mixture. There is never any doubt about finding the uterus, and when found, never any difficulty about drawing it up ; when performed in the Trendelenburg posture it affords us an opportunity of examining the tubes and ovaries, and of repairing them when necessary.

The author can not reconcile himself to the belief that so serious a mutilation as total extirpation for retroversion or prolapse is justifiable when such serious results may be avoided by the operation which he has just pointed out. His own course has been, when the case requires it, to perform, first, rapid dilatation ; second, curetting with the application of pure carbolic acid and tincture of iodine to every part of the endometrium ; third, repair of the lacerated cervix ; fourth, closure or narrowing of the anterior and posterior vaginal wall ; fifth, opening the abdomen and liberating the uterus from its adhesion, and at the same time removing the appendages or as much of them as are diseased ; and sixth, fastening the uterus to the abdominal wall—all of which can be done in a little over an hour. His results in such cases have been most gratifying.

The objection is sometimes made that the uterus is a movable organ, and should not be fixed in an immovable position. While this may be admitted, he is in a position to state that ventrofixation does not put the uterus in an immovable position, for in the one and only case of failure, which a year later necessitated his reopening the abdomen, he had an opportunity of seeing that the uterus was hanging by a cord as thick as a lead pencil, extending exactly from the place where he had fastened it behind the pubis to the anterior surface of the uterus. In many cases, on examining the patient with the Sims speculum, he could see the normal amount of to-and-fro movement of the organ taking place. The union allows free movements of the uterus, and in no way interferes with pregnancy.

As to the method of operating. After the usual aseptic precautions a small opening is made in the abdomen, about one and a half or two inches being sufficient to admit two fingers, with which the uterus is lifted up, the adhesions torn away, if there are any, and the ovaries and tubes examined. While held up by the fingers, the fundus is caught by the bullet forceps just in the center and held in the incision, while a space of a square inch is scarified with the point of the scalpel; it is then lowered for a moment while the corresponding surface of the abdominal peritonæum is treated in the same manner, thus insuring broad and strong adhering surfaces. It is then drawn up again, while two well-sterilized silk ligatures are passed through the fascia, then through the anterior wall of the uterus, and then through the fascia of the other side, tied, and cut short, to be left in permanently. In two cases silkworm gut was used for this purpose; but this caused trouble and it was abandoned. In more than half the cases he did not leave any permanent ligatures in, and it was in one of these that his single failure occurred. The abdominal wall is then closed according to the taste of the operator, the author's preference being given to the through-and-through silkworm gut sutures, which he invariably leaves in one month, by which time the exudation tissue has formed and has become thoroughly organized and strong.

THE ALEXANDER OPERATION.

BY CLEMENT CLEVELAND, M. D., NEW YORK.

See page 704.

DISCUSSION.

Dr. DAVENPORT (of Boston): There is a minority of cases in which this is still a matter of debate, and a matter in which there is considerable difference of opinion. I say a "minority" of cases, because it seems to me that with the most advantageous showing that the advocates of the operation can make, the indications for its use are still exceedingly limited. If the indications stated by Dr. Cleveland in his paper were carried out, he would find the cases comparatively few which would call for Alexander's operation. In the first place, those cases, he says, which can not or will not wear a pessary. It seems to me that if such cases are ruled out it leaves a comparatively small number which will call for the operation. In many of the cases

which I have seen the retroversion of the uterus was, I am sure, temporary in character, not as regards the displacement, but as regards the symptoms. I think we will all agree that there are probably a great many women who have retroverted or retroflexed uteri which give rise to no symptoms, which perhaps have lasted for years, but from some cause, probably a physical or nervous strain, they begin to cause symptoms, and, if seen at such time, replacement and the adjustment of a pessary for a few months will relieve the local symptoms and give the general health a chance to recover itself, the necessity for a pessary will be over, and either the uterus will remain in its normal position or, if it does retrovert, it will not give rise to symptoms. Cases of backward displacement of the uterus with adhesions do not, of course, come into the discussion of the Alexander operation, and it seems to me that I must differ from Dr. Smith when he would claim that in such cases, especially of simple retroversions without adhesions, he would prefer ventrofixation. While the indications of the Alexander operation are to my mind greatly limited, yet there is no question that there are cases to which it is applicable. But I do not consider it an ideal operation. There are objections to it. In my experience it does not always relieve the symptoms, even though the uterus may be freely movable and easily come up into position, yet after the Alexander operation has been performed the patient still complains of pelvic pain, of the menstrual symptoms, and of the other discomforts which have led her to seek relief. In the second place, I am of opinion that it gives rise to hernia more often than is generally supposed. That is a strong argument against its employment and a contra-indication to its performance. Pain in the incision and numbness in the groin are, in my experience, not infrequently connected with it. For these reasons I certainly would limit the operation. It seems to me that quite often the difficulty which is the cause of the retroversion is not the lax condition of the round ligaments, but has to do more with the relations of the cervix, both to the vaginal walls and to the lower attachments of the broad ligaments, to the utero-sacral ligaments, and it may be to this cause that the failure of the operation in some cases is due. The trouble is not with the ligaments. The ligaments themselves are not strong enough to anchor the uterus forward when those other conditions are present. At the same time, I am free to say that as yet I have had no experience with any other operation which is more satisfactory. I can not but believe, however, that it may be that the methods which are advocated and have been practiced in Germany, of vaginal fixation, opening the an-

terior *cul-de-sac* and suturing the uterus forward to the anterior vaginal wall, will solve the problem of the treatment of those cases which at the present moment are not satisfactorily explained and cared for.

Dr. VAN DE WARKER (of Syracuse, N. Y.): Being somewhat in touch to-day with the prevailing surgical spirit both here and what I fancy is abroad in the land, I feel that hysterectomy will probably be the only accepted method of treatment of retroflexion of the uterus, and I think we older fellows ought to have a chance to say something before it is too late. At the second meeting of this Association, in Boston, twenty years ago, when I was comparatively a young man, I had the temerity to read a paper on the treatment of flexions of the uterus with the intra-uterine stem, and I presume that in the whole history of the Society there has never been an instance of a man so thoroughly sat down upon and reprimanded as I was. But time, of course, brings its own revenge. One of the gentlemen who was foremost at that time in opposing the method I advocated brought out later editions of his book which fairly bristled with intra-uterine stems, and I felt somewhat compensated for the humiliation I felt at that time. If misfortune had occurred to me in the use of the intra-uterine stem, there was not a fellow in this Society, nor an expert in the land, that could have saved me from being made to suffer the penalty of manslaughter. That was the condition at that time—all resulting from one or two unfortunate cases that happened from the supposed use of the intra-uterine stem. It was an intra-uterine sound, used as they used it in those days, which produced the fatal result and condemned the whole method from that day to this, until I think there is a fair following in the use of it for the treatment of retroflexions. Then occurs the point which Dr. Mundé brought out somewhat in his paper, whether retroflexions are productive of symptoms which demand treatment. Now, I think there is no question about the resulting symptoms, no matter what the endometrium holds forth, whether it is the seat of inflammatory conditions or not, if that organ is retroflexed with congestion in one part of it, there will be symptoms which will demand relief. It is a matter of experience that a young girl, a young woman, may go on fairly well with a retroflexed uterus, but when she enters married life a new complexion is given to the case. And I do believe that if you will try an intra-uterine stem of proper construction, introduced in proper cases, with proper precautions, you will never have occasion to feel that you have committed a grave error in practice. So far as the Alexander operation is concerned, I have had some considerable experience—an experience that has not been

altogether in favor of the operation—and I must say that the principle is not scientific. I must differ from Dr. Cleveland in that. We have got to concede that that uterus was hung up at one time with the broad round ligament in a proper way, and at some certain event in the life of the subject the round ligament proved ineffective in holding the uterus—providing the round ligament has anything to do with the matter at all—in the normal position of anteversion. Now, there has been at work some dynamic force in the pelvis which has produced a retroversion, and if you attempt to cure it by shortening the round ligament you are treating symptoms and not conditions. I claim that is unscientific; it is bad surgery. There are forces at work in the pelvis which retroverted that organ. I think if I had time I could show some reasons why those forces exist and what those forces are; but at any rate I doubt if there is any proof existing to-day that the round ligaments are the organs which hold the uterus in the normal position of anteversion. There are no scientific facts presented to-day to prove it. We have got to consider that these round ligaments are bands of connective tissue which undergo enormous elongation and then shortening, and that shortening consists largely of the retrograde condition of tissues. Now, it is proposed to bring that organ, which is retroverted from other causes, into the normal position of anteversion by shortening the round ligaments. I saw Dr. Mundé do the operation, and it induced me to do it myself, and since that period, some ten years ago, I have done about thirty of the operations and am not at all satisfied with the result. It did cure anteversion. There was no special difficulty in being sure that you got down to the external ring in securing the round ligaments, but there was difficulty in bringing the organ forward, even with the finger in the pelvis, in some cases. Now, we are not always sure that we have a pelvis free from adhesions. They do exist, sometimes elongated and elastic in character, which will make the operation very nearly inoperative unless the uterus is held forward by a proper pessary, and it strikes me that that is a condition which nullifies your operation.

Dr. COE (of New York): I think Dr. Van de Warker's premises are illogical. I do not think the adherents to this operation propose to suspend the uterus as a dead weight. That was never the intention. That was never the normal function of a ligament. That is not what is claimed; but what they do claim is, not to keep it in a normal position, but to keep it sufficiently forward so that the intra-abdominal pressure may keep it in the normal position. For that reason I do not believe that those who have studied the operation most care-

fully believe it is applicable where all that is accomplished is shortening the ligaments sufficiently to hold the dead weight, for the weight is bound to cause a relaxation, and prolapsus will occur again. But we may pull it out so far as to throw the uterus past the dead center. Dr. Davenport touched on one very important point, and that is inflammation of the sacro-uterine ligaments. I think some of the failures of this operation are due to the fact that the sacro-uterine ligaments have been shortened by previous inflammation, and when we pull up the uterus we increase the pain. It has occurred to me that this is going to be, perhaps, an important advantage in the operation proposed by Dr. Polk, because in opening the vaginal fornix we divide these ligaments and relieve that tension, and then bring the uterus up in place by shortening the round ligaments. We find the uterus more movable, and do not have this persistent pain which will follow by putting the strained tissue on the stretch. An indication which Dr. Cleveland touched upon, and which I think is important, is prolapsus of the ovary. I have a good many of these cases where the patient can not wear a pessary, not because the uterus can not be replaced, not because there is any malformation of the vagina, but because there is a large, prolapsed, tender ovary against which the pessary presses. An important result of this operation has been that the ovary has been lifted up out of its abnormal position enough to entirely relieve the symptoms. I have such a patient under observation now where the symptoms have been entirely relieved by lifting this ovary up. There is hardly a comparison to be instituted between the two operations. Ventrofixation is to be performed when you have a condition which requires the finger inside the abdominal cavity for the separation of adhesions and investigation of diseased appendages. In Alexander's operation the indications are quite clear and distinct. The diagnosis is made beforehand and there must be neither adhesions, diseased appendages, nor any suspicious or contracted tissues which prevent the uterus from being perfectly replaced. So it seems to me that both operations have their particular field.

Dr. EMMET : I had not the pleasure of hearing either paper read, but would like to say a few words in reference to my idea of Alexander's operation. Shortly after Mr. Alexander began to operate I had the fortune to see him operate a number of times, and he allowed me to place my finger in the vagina while he was drawing the uterus forward ; in watching the case in that way I became fully satisfied as to the working of the operation, and as a consequence I have never done the operation, for this reason : I believe that it is the degree of

prolapse that causes the trouble—in other words, that with the convoluted form of the vessels, as they become straighter with the prolapse they become larger, which produces the congestion of blood that accompanies the prolapse. That gives the trouble, and not the displacement. That I am perfectly satisfied of. We all know that nothing gives a woman greater relief in extreme anteversion than to antevert it still more. And they get relief in a retroverted uterus by raising it up to a certain point in the pelvis where these vessels can become convoluted again, and as much blood get out of the pelvis as gets into it. If Alexander's operation ever gives relief it is by accident, simply that it has hit the point by guess work and has got the uterus at such a point that the circulation can be restored. And the same objection applies to attaching the uterus to the abdominal wall. We can not understand the working of these cases unless we fully appreciate the point that versions and flexions are symptoms merely; they are not the causes. So, when you are able to lift the uterus to that point at which the circulation is restored, relief is given.

Dr. POLK: I am sorry to find myself again on the opposite side of the fence from Dr. Emmet. In his explanation of the conditions which exist, of course we can not take issue. We can, however, take issue with the suggestions made in reference to the actual results of the operation. Alexander's operation has been before us since 1883, if I remember rightly, and it has been done more or less in this country, with repeated papers both here and elsewhere calling attention to its value, etc., from that time to this. The first one in New York was in 1885, and a number who are now present discussed it. Pretty much the same ground of objection that was taken at that time is taken to-day. But I find that some of the objectors of that time have become the advocates of it to-day, and I presume that that has been the direct outgrowth of clinical experience. And, after all, that is the test of most of our work. I believe that in every instance in which the operation is properly done the testimony will be identical with that which Dr. Cleveland has furnished here, he having been, as he himself admits, one of the early objectors. I notice that several of the speakers would be left with a comparatively small number of cases upon which to do ventrofixation if they did not include in their list certain others which they claim have been wholly excluded from the category of the Alexander operation, the cases being such as suffer from adhesions binding the uterus in its abnormal position. Wipe those out of the list which has been suggested as favorable to ventrofixation, and you leave ventrofixation largely in the majority. They

can be readily wiped out in the manner suggested by Dr. Cleveland, Dr. Coe, and myself repeatedly, by simply breaking up these adhesions. It is one of the safest procedures in the world, examining those appendages and operating or not on them as you see fit—a measure which is entirely within the reach of every operator—and then proceed to do your Alexander operation, bringing that class of cases within the list of those that belong to Alexander. You make it, even in the words of those who advocate ventrofixation, an immeasurably better operation. Ventrofixation is a good operation in its place, and there is scarcely an operation in the whole range of surgery that has an advocate that has not some place; but the main thing is to keep it in its place. It has a limited application, and its application is simply to those instances in which you have made a laparotomy, and in which, consequently, the best thing to do is to fasten the uterus to your incision. It is in the interest of the patient that it is done. It seems to me that aside from that it has no standing. Undoubtedly you will find many pelves in which ventrofixation is an impossibility. Any operator who has found a uterus situated in a small pelvis, deep down in that pelvis, with the pelvic floor made rigid with the results of more or less inflammation, knows perfectly well that the average uterus can not be lifted so as to be held easily in position against the anterior abdominal wall. That class of cases is, of course, entirely outside of the category of ventrofixation. They are not, however, outside the category of cases that would come under the operation suggested by yourself, Mr. President, and the one suggested by Dr. Wylie. But mind you, sir, the supposition is that you have opened the abdomen not for the purpose of doing ventrofixation, but for some other purpose that is of far more consequence to your patient. If you simply opened the abdomen to do a ventrofixation, you had far better do an Alexander operation after breaking up the adhesions. And now as to the gentleman who originated this procedure. I think that there is hardly anything of an operation that has stood the test of time so well as this—I mean the technique. A great many efforts have been made to improve it, and no doubt in some few instances—notably, perhaps, by Dr. Edebohls and Dr. Cleveland—some success has been met with; but the essential steps as laid down by Alexander hold good to-day as well as they did the day he advocated it, and while we are glorifying the operation we may justly glorify the gentleman who first made it possible for us to do it.

Dr. BALDY: It seems to me that Dr. Polk might with advantage

have continued his remarks in regard to the class of cases in which ventrofixation is not applicable. If, as Dr. Polk has stated, the pelvic floor is rigid and the uterus can not be brought up, it is not a retrodisplaced uterus which is causing the trouble, and the operation is entirely inapplicable; but so is Alexander's operation. The disease is of an inflammatory character outside of that uterus, and it is to that that you must look for your symptoms. When you try to narrow down the subject as to the class of cases to which each of these operations is applicable, they are in the minority. There are a few cases of retrodisplaced uteri uncomplicated by any other diseases in which there are symptoms from which the patient suffers. Those are in the minority, and the majority can be cured by a pessary. That narrows very largely the field for Alexander's operation, and what is left of that field is wiped out of existence *in toto* in my own practice, because I can not distinguish accurately enough to be sure that there are not adhesions. I frequently open the abdomen and find adhesions where I least expect them; and there is a class of spider-web adhesions which exist sometimes and it is absolutely impossible under any circumstances to say they exist, and if they do exist Alexander's operation is out of the question. When it comes down, after all, to the question of what is applicable to this operation, it brings us to a very narrow field. The pessary clears up a majority of the cases to which Alexander's operation is applicable, and I am free to confess that my inability to diagnose a good many of the small balance which is left wipes out the Alexander operation so far as I am concerned. For prolapsus neither of these operations is any good unless the plastic work is done most thoroughly immediately. There are a small number of cases of complete prolapsus—and I say "a small number" because I do not wish to be misunderstood—in which there is an exceedingly large and badly diseased uterus in which a hysterectomy is possible and is the easiest and surest way of curing the patient, backed up by the plastic work. I have tried in the past doing a vaginal hysterectomy, and four or five covered the whole number.

Dr. EDEBOHLS: The large subject that Dr. Mundé endeavored to cover in his paper has scarcely been touched upon, all the discussion having been upon the merits of the Alexander *versus* other operations. Some two years ago I presented to this Society a list of nine or eleven cases in which I performed for complete prolapsus of the uterus and vagina various plastic operations combined with ventrofixation, and advocated at that time that whenever you have a case of complete prolapsus of the uterus and vagina, and the case does not belong to

the minority which Dr. Baldy has pointed out, where the removal is justifiable, the plastic operation should be combined with ventrofixation. My experience since then has confirmed the views I expressed at that time. An incidental point made by Dr. Mundé has been that pregnancy must necessarily undo all the work you have done and reproduce prolapsus. Only one of those I operated on has since become pregnant. She was delivered in due course of time, and I saw her one year later, when she remained completely cured of her prolapsus. The next point Dr. Mundé touched upon was the comparatively new one of Fryne's operation for complete *prolapsus uteri et vaginæ*. While my experience with that operation has not been large, it was probably as early a one as any of us had with it. My operations were performed in January of last year (two), and since then I have performed three further ones. I was very enthusiastic about the operation immediately after its performance—its simplicity, the absence of danger, and its applicability to that helpless class of cases where we were afraid of a large number of plastic operations. I am now in a position to moderate my enthusiasm somewhat, and as I have been requested by letter to give my reasons, I now express them: Of the five cases I operated upon, the very first remains completely cured after a year and five months. One other remains cured after eight months. Two have had a relapse, one after one month and one after two or three months. The fifth case I have been unable to follow. Still, even with this showing, I consider the operation a beneficent one, and one which, even if repeated, is not a serious thing to do. You can do it with cocaine, and just as well as you can once a week or once a month reintroduce a pessary, you can introduce a few sutures to make your patient comfortable. I wish to say one thing in regard to the Alexander operation, as a result of recent experience, and that is, that a statement which I have never heard challenged yet and which is repeatedly made is not quite true. Dr. Cleveland has made the statement that when there is no ligament in the canal it is the fault of the operator; the ligament is there, but the operator fails to find it. I thought so until some three or four months ago, when I found the round ligament on one side in the canal, and having opened the entire length of the canal on the other side I failed to find the ligament. I investigated the case further. I made a median incision from the fundus and picked up the uterus, and traced the round ligament from the cornu of the uterus outward. I found the round ligament turned into the left abdomen at the internal ring, but after emerging there it spread upward and outward. It went upward in-

stead of downward. That was interesting, and probably will have to modify our statement, for sometimes, at least, when the ligament is not found it is not the fault of the operator. The five cases of Fryne's operation were all cases of complete prolapse of the vagina.

Dr. POLK asked about the distribution of the ligament, whether it passed entirely through the canal, or if it passed but partly through the canal and was distributed beneath.

Dr. EDEBOHLS replied that the ligament passed in its entirety through the internal ring and did not enter the abdominal course of the canal, but immediately turned upward and was inserted beneath the fascia of the external oblique.

Dr. MUNDÉ (in closing) said : Dr. Van de Warker's objection to the Alexander operation reminds me a good deal of the criticism which the Austrian Government made of Napoleon—that he was not fighting on the old-established principles. He says the operation cures the symptoms but not the disease. It cures the symptoms ; that is what we want to do. And I think Dr. Emmet's objection is answered on the same ground. If the circulation is restored by Alexander's operation, that ought to be sufficient. I never used a stem for retroflexion ; it is not necessary. I did Alexander's operation first on the 12th of December, 1884. I reported my first cases in 1886. I have since done it seventy-eight times, and once since I wrote this paper. I saw Alexander do it after I had done four or five operations. I found that he did it precisely as he described it, and I have followed him and have kept pretty much to the same technique. I am much interested in Dr. Edebohls' statement. Last winter, in operating, I thought that on one side I had got hold of an intestine, and it was only when I opened the other side that I split the ligament and found what the condition was. The result proved that it was not the intestine, but the ligament. But I am unqualifiedly in favor of that operation, based on an experience of ten years and on the results in a good many cases which I have been able to trace. Of course there is no comparison between ventrofixation and Alexander's operation. They do not belong in the same category and are not done for the same thing.

Dr. CLEVELAND (in closing) said : It has been stated by Dr. Davenport that pain is a constant symptom after a great many of these cases of Alexander's operation. I think that is true because of the improperly selected cases, and it is also true in a great many of the cases where there has been simple retroversion. But if those cases are studied and watched a sufficient length of time it will be

found that the symptoms are relieved and the pain disappears. The operation is done for the symptoms, and I have operated on eighty-four cases in which the operation was done for symptoms, as stated in this paper. I have not heard from every one of those cases, but from a large number, and in a large majority the symptoms have been relieved after a sufficient length of time. The testimony of the patients is enough to satisfy me of the value of the operation.

Dr. LAPHORN SMITH (in closing) said: I venture to say that ventrofixation is applicable to the widest range of cases of any of these methods we have discussed. It will do in every case where a pessary will do. It will do in every case where Alexander's operation will do. It will do in every case of the vaginal operation on tubes and ovaries. I like Alexander's operation well; I was never against it; but it is so difficult. Many men in this room have spent an hour finding those ligaments. In some cases I have had even to end up by doing ventrofixation; found the round ligaments like pieces of fat, and had to do ventrofixation in the end. You can open the abdomen a hundred times without a death; no one will deny that; the death-rate for hysterectomy is only three per cent. If there is a death-rate to ventrofixation I am opposed to it; but there is no death-rate. And if it fails to cure I am opposed to it; but it does not fail to cure. I also am glad to find Dr. Edebohls setting forth the necessity for doing everything at once—making a complete job of it. There is no use fixing up the uterus and leaving the vagina falling out. There is no use fixing up a uterus of three or four times its proper weight. The whole thing can be done in one hour, and you can tell the patient she is cured there and then. I have known only one failure, which I have explained, and which will never occur again. I did my first case five years ago on an Indian squaw. Her uterus was hanging out of her body. I told a friend to push it up, and he pushed it up so far it touched the liver. I left the ligatures in fourteen days, and thought she could have a carriage to ride to the station, a distance of two miles, but her husband made her walk. I wrote to her doctor at the Reservation, and he says she has been cured ever since.

(It was directed to be recorded in the minutes that this discussion was closed for want of time.)

Abstract of a paper entitled

ABDOMINAL SECTION FOR PUERPERAL SEPTICÆMIA.

BY J. MONTGOMERY BALDY, M. D., PHILADELPHIA.

During February, 1887, there came under my care a patient presenting the history of puerperal septicæmia. An abdominal section followed, when the left Fallopian tube and ovary were found distended with pus and were removed. The patient made a speedy and thorough recovery. To the best of my knowledge, this case was the first one upon whom an abdominal section was deliberately and knowingly performed for puerperal septicæmia.

The case is an excellent representative of one class of patients suffering from puerperal septicæmia upon whom an abdominal section is not only advisable but essential. The practice of removing the uterine appendages which contain pus accumulations at this period of a woman's life has become so thoroughly established since the report of the above case as to need but casual mention, whether that pus accumulation existed prior to the pregnancy or occurred subsequent to this condition.

So much for true pus cases; but there is another and larger class in which there is infection of the Fallopian tube, the ovary, and possibly the peritonæum, without any formation of pus but with more or less decided tubal and ovarian disease with peritoneal and connective-tissue exudate, easily demonstrable by a local examination.

In general, it is safe to say that in an attack of puerperal salpingitis and pelvic peritonitis dependent thereupon, no pus being present, an immediate operation is not demanded. Further, in those cases in which it is doubtful whether or not pus be present, the general condition of the patient permitting, delay is preferable, the patient being carefully watched and a secondary operation, if necessary, performed later.

Infection passing from the uterine cavity through the Fallopian tubes into the peritoneal cavity and terminating in a septic or suppurating peritonitis may be dealt with according to whether or not the inflammation remains localized or becomes general. The treatment of the intraperitoneal abscesses would resolve itself into a very simple matter could the physician be certain that no pus was contained in the Fallopian tubes or the ovaries. The difficulty here lies with the diagnosis, as in a large number of these cases no such assurance can be obtained. One line of treatment would be the adoption

of abdominal section and evacuation of the abscess. The operation is no more severe and is fraught with no more danger than would be the opening of the abscess through the vagina, and has the additional advantage that if tubal and ovarian abscesses are found they are readily detected, and their removal can at once and intelligently be proceeded with. Should, on the other hand, the peritonitis have become a general one, the patient, as far as we can judge from past experience, will inevitably perish. As exact and accurate intraperitoneal diagnosis is more of a *desideratum* than a possibility, it were well in all cases where the patient does not seem beyond all chances of recovery to give her the benefit of the doubt in the diagnosis (however slight that may be) and operate. Not infrequently it may be found that a mistake has been made, and what was looked upon as a general peritonitis is more or less localized. Turning our attention now to that form of puerperal septicæmia known as puerperal cellulitis, that variety in which the infection has found its way from the uterine cavity by way of the lymph channels and blood-vessel walls into the surrounding connective tissue, we are confronted by a much more difficult problem and one which will no doubt produce a wider difference of opinion. The first difficulty which presents itself is the old one of diagnosis. It may be stated that the large number of cases in which suppuration has not taken place may be excluded from the category of those amenable to treatment by abdominal section. There still remains, however, for our serious consideration, the suppurative group. With tubes and ovaries distended with pus, we have already decided in favor of abdominal section and removal of the offending organs. If, in addition, the broad ligaments and pelvic floor be infiltrated and contain pus, why stop short of removing as much of the disease as possible and draining the balance? Is there any method of incision, either single or multiple, which will so thoroughly lay open and afford such thorough drainage of the suppurating tissues as the removal of the entire uterus? It is true that objections will be offered, and in fact have been advanced, that where the infection has once passed into the connecting tissue the disease has ceased to be a local one, but has become general and is beyond reach. Has, then, the disease become a general one, as is contended by some? By no means, at least in its reasonably early stages. The disease is essentially a local one until such time as the blood is so broken down by the absorption of septic matter as to longer preclude the possibility of life. When has that point been reached is the question which must be answered, and it is one which it is by no means easy to determine.

If the physician decides that, provided there be no more absorption of sepsis, the patient's chances for life are good, then it would seem that, instead of wasting invaluable time in "building up" the woman or "waiting," it becomes our duty to see that there be no more absorption, or if perchance it can not be stopped altogether, that at least it be minimized. What way of accomplishing this is there comparable to the removal of the bulk if not all the diseased structures by hysterectomy? As a rule, if anything is to be accomplished in this line it must be within the first week or two, as experience has shown that either death or beginning convalescence is usually an accomplished fact by this time.

Equally if not more difficult cases to deal with are those in which no disease of the pelvic peritonæum, Fallopian tubes, ovaries, or connective tissue are demonstrable by an examination. The absorption of septic material is taking place from the cavity of the uterus, as demonstrated by the absence of all other cause and the presence of purulent and fœtid discharges. The so-called diphtheritic and gangrenous cases are of this variety. Intra-uterine douching, curettage, the free use of pure carbolic acid to the interior of the uterus, and drainage by gauze packing or otherwise, having failed to bring about a diminution in the high temperature and pulse, or after a few hours of diminution these begin to creep higher and higher, especially if the discharges continue, what remains short of hysterectomy to put a stop to the disorganization of the blood?

In attempting to carry out these principles two facts must stand forth with great prominence. If any great amount of good is to be accomplished the decision must be arrived at and the hysterectomy performed early—the earlier, the better the success. In attempting to arrive at an early decision there will be the greater danger of operating upon patients who would otherwise have recovered without this interference. The greatest care and discrimination will consequently be necessary in deciding for or against the radical procedure, and the more skilled the physician in diagnosis, the fewer mistakes he will make *pro* or *con*.

It must be admitted that the field for hysterectomy in puerperal cases is not a large one, but that it exists to a certain extent is patent. The success following this procedure has so far been encouraging in spite of the fact that the number of times it has in the past been resorted to are not many.

Puerperal septicæmia following rupture, bruising, or twisting of the pedicle of a neoplasm complicating pregnancy and delivery need only

be mentioned to demonstrate the necessity of abdominal section and removal of the neoplasm for its relief. Rupture of the uterus can only be included in this same category, in spite of the fact that some few have recovered without operation.

Nineteen cases of hysterectomy have been reported by American operators, with seven successes, and although some of the successful ones might have recovered without the operation, still, a careful study of the reports indicate that quite the reverse is probable.

DISCUSSION.

DR. FERNAND HENROTIN (of Chicago): I do not know that I am exactly ready to open the discussion, because there were some points I did not catch very well, and to-morrow I expect to read a paper upon the conservative treatment of affections coming from septic causes, and which will be an answer in part to the argument offered by the doctor to-day, in the choosing of the method of operating that he advises here in his paper; also from the fact that to-morrow we will have a discussion of the abdominal *versus* the vaginal route in operating, which will also clear up the subject in so far as it applies to septic conditions following childbearing. The doctor says in his paper that there is no more danger in draining abdominally than through an incision in the vagina, providing packing is done, iodoform gauze used, and the abscess is opened carefully. To this I take decided exception. Draining an abscess, unless it communicates with the sides of the abdominal wall in some way so that it can be reached freely, if it is passed through a healthy peritoneal cavity, is always more dangerous. Of course if a man has had special opportunity to do that class of work he will naturally be able to do better work, but draining through a healthy peritoneal cavity will always be accompanied with more danger. As to the propriety of taking away the uterus in some of these cases, it is very positively my opinion that the method is proper under certain circumstances, and I will allow that in doubtful cases it is very proper to open the abdominal cavity and try to reach the site of the disease so as to be able to tell as to whether there is a possibility of being able to do more conservative work. However, the condition of the patient is frequently an indication as to how to proceed. As regards the presence of pus in the pelvic cavity, that certainly can be reached through the vagina successfully. I had occasion about three weeks ago to operate on a patient on whom I had made a diagnosis of hæmatoma of the broad ligament due to the rupture of an extra-uterine pregnancy. When I

opened it there was no pus, but a general infection running up beyond the umbilicus, with a greenish gangrene of the uterus, ovaries, and tubes and the lower part of the omentum; in fact, the most foul mass you could get into, and yet comparatively no pus. I was obliged to make a complete sweep of everything, and although the patient was extremely low, much to my surprise she made a complete recovery. In cases where there is no demarcation it is the general principles of surgery which should guide us, and I believe, as Dr. Baldy does, that a complete extirpation will probably give the patient an infinitely better show, the taking away absolutely of the septic material that can be reached. Did I understand the doctor to say that he had never seen a case of general diffuse peritonitis under such circumstances get well?

Dr. BALDY: Suppurative.

Dr. HENROTIN: It is hard to tell in this way. It is certainly a fact that septic peritonitis after appendicitis does get well if operated upon soon enough. Often, if you will examine the patient, you will find septic peritonitis extending over the whole cavity, but if it goes beyond a certain time, say thirty-six or forty-eight hours, the patient can never get well. But if you have a secondary trouble, as an inclosed pus sac becoming more virulent in its inclosure, the patient will not recover. There is some question as to whether the abdominal or the vaginal route is the proper method in such cases even as Dr. Baldy's, and I do want to make a strong plea for the conservative method of trying to reach these things early and to reach them rationally, and to try to cure them without quite such severe and dangerous forms of operation.

Dr. WYLIE (of New York): My work has not been known of very much as being in obstetrics, still, I have always taken a deep interest in this, and my physician in Bellevue has given me opportunity to deal with a large number of cases of a class where the disease had become localized. My experience is that no one can make an exact diagnosis of those cases at the beginning, or as to the exact point the poison has reached. In some of them we can, undoubtedly. In some of these cases I have followed a very simple procedure—that is, washing the uterus frequently enough every hour so as to be able to kill the septic germs completely and long enough to stop the sepsis. I have done this so frequently with puerperal sepsis, where I could make out that it was located in the peritonæum, or lymphatics, or pelvic tissue, that I do not pretend to make any operation until I have washed the uterus every hour for six hours. If this is done properly

and completely, any one who has never tried it and has tried the fashionable curetting in his treatment, will be surprised at how many cases can be completely cured by it. I agree with the last speaker that a great deal can be done by conservative work—that is, where a case reaches you in an almost hopeless condition, you can often draw the pus away without disturbing the patient much. I believe as much as any one in draining, but I do not believe in draining until the test has been made in these cases. As to whether the patient can be cured by an operation when puerperal sepsis has entered the peritonæum is a difficult question. It very much depends on what kind of fluid it is that enters it. If it is not localized it is difficult to diagnose it. Then, again, I am satisfied that the character of the poison differs in cases of puerperal fever. It is the doctor's statement that general peritonitis can not be cured by operation. The mistake is made in losing so much time supposing the poison is somewhere else. If a diagnosis could be made, I am satisfied some of them could be cured. For rupture and abscesses about the appendix I have done it. I am satisfied that the sepsis we are speaking of varies so much in its intensity that we can not treat it on any such general lines. I believe that in nine cases out of ten we can kill the puerperal fever if the uterus is washed out and the treatment is begun in from twelve to forty-eight hours after the commencement of the chill—washing out the uterus every hour, emptying it first. The mistake is that the washing is not done frequently enough.

Further discussion was postponed until to-morrow's session.

Adjourned.

Morning Session at 9.30 A. M.

May 29, 1895.

The President in the Chair.

Continuation of discussion of the paper of Dr. Baldy :

Dr. CURRIER : I find it somewhat difficult to take up the thread of the discourse where it was left off yesterday. The paper which was read to us was one of the greatest importance, and a matter on which definite ideas are not as yet thoroughly formulated. It seems to me, however, that there are some points upon which we as a society should declare ourselves definitely. Perhaps the best way to get at the matter is by the process of exclusion and of narrowing ourselves down to the proportion of cases which are operable, because

that I take to be the salient point of the proposition of Dr. Baldy. I think that the matter of operations upon cases in which the peritonitis is diffuse with septicæmia, whether with or without suppuration, is one on which we can decide definitely. From my experience, I feel that those cases should be excluded from the operation. Dr. Wylie, and I think Dr. Henrotin, felt that there were cases of this character which could be safely operated upon. For myself, I feel that those cases in which the septicæmia is general and the peritonitis is diffuse are beyond the pale of operation. But those cases in which the suppuration and inflammation are extraperitoneal, it seems to me, are quite within the line of operation, and if we observe the general surgical law of making our incision at the most dependent point, we can usually hope for a successful result in those cases. I have operated on several in which that condition obtained, and in all but one case the result was satisfactory. That narrows the question down to those cases in which the inflammation is confined to the uterus and the annexa, and there, of course, is where our difficulty comes. Dr. Baldy stated that if the operation could be done it should be done in the course of the first week after confinement, but we all are aware that many of these cases which come to us as specialists are not seen until after the first week; in fact, in some of the cases the evidences of inflammation are not apparent until after the first week, and it very frequently happens that when we see these cases they are quite saturated with septic influence, and the question of doing so grave an operation as the removal of the annexa, or annexa with the uterus, is one of great magnitude. I feel, from my own experience in this matter, that an operation of such magnitude as the removal of the uterus and the annexa, in cases of this far-advanced character in which the uterus and the annexa are involved, and probably considerable general intoxication, is not likely to be followed by success. Dr. Baldy said very truthfully that there were many cases, probably, which had been operated upon which were not reported, and that those cases were usually fatal. I believe the number of them is much larger than is supposed, and in taking that into consideration, and also that only seven out of nineteen cases reported are successful, we will have doubts as to the propriety of resorting to so grave a procedure. It is certainly a fact, as was stated in the discussion of this subject before the New York Academy of Medicine, that some of these cases will recover without operation at all, and that, I think, must not be lost sight of. So that, for myself, the question of doing abdominal section, and particularly of removing the entire uterus, must be reserved

for very few cases of this character. There is a class of cases in which the products of inflammation are extraperitoneal, where the products are in the broad ligaments, which are sometimes amenable to operation, cases in which peritoneal section must be made, but made for the purpose of determining what the situation of the products is, and in those cases the peritoneal section may be followed, as we all know, by a lateral section, and the products of inflammation got out in that way, and the result be satisfactory. I recently had a case of that kind in which the result was all that could be desired, although the patient was almost moribund at the time of the operation.

Dr. NOBLE : I think that there should be brought out very sharply the difference between the early cases and those seen late. It seemed to me that the first case reported by Dr. Baldy yesterday was more properly an operation for the removal of a pus tube than an operation for puerperal sepsis. This class of cases where there is a pus-tube or abscess of the ovary, which comes under the surgeon's eye ten weeks after labor, is a very different matter from acute sepsis which is seen within a week. I think that point can not be too strongly emphasized. Confining ourselves to the first class of cases, it is my opinion that there is a small field for the operation, and that it is in those cases in which the recognized methods of treatment fail to arrest the sepsis which is started as a septic endometritis. There is a small class of cases where the recognized method of treatment fails, and we are brought face to face with the fact that if we leave the patient alone she is going to die. I think in that class of cases a puerperal hysterectomy is indicated. But I would not do it in those cases where she is so thoroughly septic as not to recover. I think that would be the result in all cases which were thoroughly septic at the time the operation is done. I think it will have to be done within the first week, within three or four days after the process starts, otherwise it is no use to do it at all. In the latter cases it seems to me that the general principles governing pelvic work apply to puerperal cases, as to those arising from gonorrhœa, or peritonitis due to appendicitis, and I do not think there is anything very new to be said on the subject. Puerperal hysterectomy done at the end of the puerperal month is merely a detail in technique. It is occasionally necessary or advisable to remove the uterus in addition to the appendages, but to me that is absolutely a different indication, an absolutely different operation from removing the puerperal uterus, which is itself the principal seat of infection.

Dr. COE : I have been looking for a typical case of puerperal

peritonitis, and found two weeks ago what I considered an extremely favorable case. I thought if there was any chance for the operation this would be the case, and I operated on the fifth day after the initial chill. The patient was in excellent condition at the time of the operation; temperature a little over 100° , pulse 110, and everything favorable. I found congested peritonitis, a small amount of serous fluid in the abdominal cavity, no adhesions, and the tubes and ovaries practically free; acute salpingitis, acute abscess of both ovaries. The operation was performed quite rapidly. I did not remove the uterus, because it was small, and I did not wish the patient to have any shock at all. Washed out thoroughly, drained through the vagina. The patient was dead within twelve hours. She made a perfect recovery from the operation; temperature below 100° and pulse about 100, but she suddenly collapsed and died. That was most discouraging, and I think it was about as favorable a case as any one could have selected. It was a private operation, under favorable conditions. I was not able to make an autopsy, but I was able to exclude hæmorrhage, and she had no indication of heart trouble or renal trouble. So my judgment is that it is almost impossible to select a case clinically at such a stage of development as to say it is localized. Even a case in which there seems to be no peritonitis, no high temperature, no particular weakness of the heart, the patient may suddenly collapse, as those patients do who become thoroughly infected and we have not operated soon enough to save them. So I must certainly characterize abdominal section for general puerperal peritonitis as purely an experimental operation.

Dr. SMITH: I reported one case, which was successful, of removal of the uterus for puerperal septicæmia, and take great interest in the question. As was said yesterday, there is no doubt that a majority of the cases of puerperal fever can be cured by washing out and drainage. Drainage, especially, I have found very valuable, with the introduction of iodoform gauze in order to keep the channel open. For those cases which, in spite of washing out and drainage, keep going from bad to worse, where we are absolutely powerless and stand by helpless, I think we should devote our efforts in the direction of doing something. We are trying to find something for a disease which is otherwise invariably fatal. In the case in which I succeeded I think, perhaps, I succeeded on account of the very crude method I employed. I had to do it suddenly. I opened the abdomen for something else and I found the congestive stage of peritonitis. In thirty seconds I had to make up my mind to do something. I did

not want to sew the woman up and leave the uterus there. In another operation, which I did for the same condition in a woman who had had a miscarriage, I removed the tubes and ovaries, but not the uterus, and when I took off the tubes and ovaries I found across the cut edge the ends of little points of lymphatics full of pus, and I left those infected surfaces in the peritonæum and the woman died. I would suggest that you all try the plan of cutting off and isolating the infected area. In another case I saw on each side of the uterus a little row of yellow points which were the infected lymphatics which ran alongside the uterus. If an incision was made in the broad ligament these would evidently have been exposed, and this highly infected pus would have infected the peritoneal cavity; but if they were taken out and a wire put around it so as to choke off the circulation of the lymphatics, is it not possible that the case would have a better chance?

Dr. BALDY (in closing) said: In the first place, the class of cases to which the operation is adaptable is exceedingly limited, and the line must be drawn very sharply between the chronic conditions and the acute puerperal cases. If they go beyond a week we have no chance to wash out the uterus every hour, as suggested by Dr. Wylie, or to curette, or to do anything else. The question is, What can we do to save the woman's life? Has there been enough sepsis absorbed to kill her? I believe that in that class of cases, limited in number, the operation will save the patient. Of course we may make a mistake in operating on cases where we should not, but I take it that the general operator will be very loath to operate. It will frequently occur that we operate on cases which are totally and absolutely hopeless. Dr. Coe's case died; that is true; but that seems to me to be no reason why he should not try again, and he may, perhaps, save the second or the third case. As to washing out the uterus every hour, these patients generally come to us to consult us, and we do not see them until the time has passed when washing will do. If you wash out the uterus once and it does not succeed, what is the use of washing it out where you can squeeze pus from the uterine walls? The question gets to be one of diagnosis. One word more in regard to general suppurative peritonitis. Dr. Henrotin and Dr. Wylie spoke of cases of ruptured appendicitis and ruptured pus-tube, with the abdomen full of pus, where they got well. That is not general suppurative peritonitis; that is simply the pus. According to their acknowledgment, if the case goes on for twenty-four hours longer it is hopeless. In that twenty-four hours general suppurative peritonitis has set in. No one

has ever placed a case of that kind on record where it has been satisfactorily proved that that case has been saved.

Abstract of THE PRESIDENT'S ADDRESS, entitled

THE RELATIONS OF LITHÆMIA TO DISEASES OF
THE PELVIC ORGANS IN WOMEN.

BY MATTHEW D. MANN, A. M., M. D., BUFFALO, N. Y.

Under the above caption Dr. Mann said : I should certainly show a very poor sense of gratitude did I not at this, the earliest opportunity, express my appreciation of and gratitude for the honor of having been elected to the chair of President of this Society. This gift should be greatly prized and confers great honor upon its recipient, and I thank you for it.

A new epoch in the Society's history is marked by the election of last year. Men who have occupied this chair have been founders of this Society as well as of the science of gynæcology—Barker, Thomas, Peaslee, Sims, Byford, Smith, Emmet, and their successors. You have now elected one whose only claim to greatness is that he has learned of them. This marks the putting forward of a new generation, not that it pushes the older men to the rear. Still it means that the burden of the day is put upon younger men, and they must in the near future have the welfare of the Society in their keeping.

We of the generation to which I allude have great responsibility placed upon us. It will demand our best endeavors and most earnest thought to maintain the standard set before us. We have to keep abreast of universal progress not only, but to maintain American gynæcology in the pre-eminence which it has attained. The way lies through hard work. The world will not be disappointed. This Society's success is a just cause for pride to its founders. It is to-day more active and vigorous than ever before. A large proportion of representative gynæcologists are in our ranks. Applications for admission by eminent men are before us, and in a short time we must extend our membership. Such action is most advisable. We must not be too exclusive, but admit men who have done good special work. Particularly do we want more obstetricians. There is not sufficient interest shown in this branch, and the gynæcologist should not neglect the work of his confrère.

Obstetrics has had many able men devoted to it, and the race of the prophets is not yet extinct, yet obstetrics has not made, in this country, proportionate advance with gynæcology. It is to be deplored that many of the bad cases that come to us come from mismanagement in obstetric practice.

Teaching in obstetrics is much neglected, and the number of great maternity hospitals where training may be received is far too few.

I must mention upon this occasion the great loss sustained through the death of Dr. Goodell.

He was the best type of a Christian gentleman and of a scientific physician. He exerted a powerful influence upon gynæcology and obstetrics in this country. Not so original as some, yet what he said made deep impression on account of its common sense, good judgment, and simplicity. One of his last public acts was to represent this Society in Washington in a characteristic plea for rational conservatism. He has had a great part in making this Society famous. A proper memorial will be presented. The trend of modern gynæcology is toward the surgical side, but we must admit that we operate to remove what we can not cure. This will not always be so. Therapeutics, chemistry, and bacteriology will some day enable us to deal with cases now relegated to surgery. Even now there are a large number of cases not surgical. They constitute a class not always understood or well treated.

I would now attempt to throw a little light upon such cases—cases where the minor diseases of the pelvic organs are a less consideration than certain general conditions. There are three sets of organs in the pelvis, differing yet intimately associated in function and position. No discussion of this subject would be complete which did not include the urinary and alimentary organs as well as the genital. The course of gonorrhœa shows how these organs may be related. It may travel up the urinary tract as well as the genital; even the rectum does not always escape. Some of the intractable diseases of this organ may eventually be proved to be due to gonococci.

What has been said of gonorrhœa is true in a less degree of septic disease, *i. g.*, aseptic vaginal discharge may infect the urinary tract. There are other ties by which the pelvic organs are united beside mere contiguity. Vascular and nervous connections are intimate, and through them secretions of glands may be reciprocally affected, for by reflex action diseased conditions in one may alter secretions in another.

Here are some of the symptoms, subjective and objective, due to the above-mentioned interdependence of function. The victims of these conditions are numerous. The symptoms of which they complain are often vague. They tell us of pains and aches in various places, many of which we call reflex. Menstrual disturbances, dysmenorrhœa and menorrhagia, most frequently, vaginal discharges, backaches, bladder symptoms, constipation, hæmorrhoids. They suffer from insomnia and dyspepsia, coated tongue and dry skin. And through all they are nervous. Spirits may be depressed with sometimes a fear of insanity.

Occipital headaches and left intercostal neuralgia are common. Examination shows no serious lesion of pelvic organs.

Rarely are the tubes or pelvic peritonæum affected. The uterus may be heavy and congested. In almost every case there will be discharge from the cervix. One or both ovaries may be heavy or prolapsed, pressure about the cervix or in the region of the ureters may elicit tenderness. There may be rectal disease, hæmorrhoids, fissure, or catarrhal inflammation.

The urine if properly examined will give much information. The quantity varies, but is almost always below the normal—often reduced to ten or twelve ounces. I make it a rule to measure the urine in every case that comes into my hospital. In twenty consecutive cases the greatest amount passed in twenty-four hours was forty-six ounces; the least, five and a half; average, fifteen and a half ounces.

This scanty urine is always acid and contains an excess of uric acid. In place of scanty urine we may find it clear, limpid, and of low specific gravity; even when the quantity is below normal the specific gravity is rarely high, showing in all these cases a deficiency of solid excretion. In fact, renal insufficiency may exist and the quantity be near normal. This insufficiency is of great importance in pelvic diseases. Urine as a whole is toxic, and its retention in the system must have a toxic effect.

The excess of uric acid in the cases mentioned is not usually found free, but in the form of amorphous urates. Herter says: "We may accept it as true that a urine from which the urates separate gives us good reason to believe that there is actually an excess of uric acid, and that this probability is increased if the density of the urine is of a density less than 1025. The converse of this is not true, but when present serves as an easy test."

The blood also must be tested. Herter shows the importance of this when he says that anæmia is one of the important causes of ex-

cessive uric-acid output, and many neurasthenics who have given no reason to be thought anæmic have shown a decided diminution of hæmoglobin; but while the above is true, it is probable that the excessive output is in many cases due to disturbances of digestion.

These patients are not all chronic invalids. They frequently get better, to relapse after some strain; nor is every lesion mentioned to be found in each case. Different combinations occur. One often met is endometritis, failure of digestion, anæmia, and irritation of the urinary tract, with various nervous symptoms added. In other cases uterine lesions and symptoms will predominate; yet a certain family resemblance may be traced in all enabling us to group them.

What shall we call these cases? We might call them lithæmia, but in so doing we must remember that the secretion of an excess of uric acid is only one expression of a great variety of functional diseases.

Perhaps we may use this term because it is now getting to be understood in its better sense.

Lithæmia is a disturbance of nutrition of a certain type, in which there are peculiar tendencies, one of which is excessive output of uric acid. As this disturbance inclines to continue and to recur in the individual, we may call it "diathesis." Hence the term uric-acid diathesis. I think that considering them as cases of general disturbance of nutrition will promote a closer study of each case. The pelvic lesions may be the cause or the result, for we must discriminate carefully in this regard. To simply treat the pelvic organs alone might prove futile, yet they may need it even to extirpation of tubes and ovaries.

To show the interdependence of organs let me trace an imaginary course of events.

Trouble starts in the stomach, intestinal digestion is interfered with, and imperfectly prepared products are presented to the liver. The circulation in the liver is retarded from disturbance of function, and pelvic congestion results; this may result in uterine catarrh, and this in turn become purulent. Bacteria in a latent state are always present in the vagina and cervix, and need but the proper conditions to become active and produce their known effects. This condition is found in the congested catarrhal uterus, and in this way a simple catarrh can be changed into a purulent inflammation. Other results are nervous derangements caused by insufficient elimination by way of the skin, intestines, liver, and kidneys. So a vicious circle is established, always reproducing and intensifying the morbid conditions.

I attribute to abnormal and consequently irritating urine many of

the symptoms directly referable to the bladder not only, but others not generally understood to be so produced. Urine, normal not only with regard to solids but also with regard to liquid, is unirritating to the healthy urinary tract, but when it contains abnormal constituents it is so. Exactly what is the irritating ingredient is not determined. Whether it be hyperacidity or not is not known, but it is a clinical fact that the neutralization of this urine allays the irritation. Pain in the ovaries may be due to ureteral inflammation, this due to irritating urine. Irritable bladder is due to the same cause, as is also urethral caruncle, and which is but another symptom of a general diseased state.

The rectum may be involved in the same train, by congestion of the portal system, thus producing hæmorrhoids. Constipation is another factor resulting from disturbance of digestion, to which faulty dress contributes. Reflex action of the sphincter may also cause constipation. Hyperæsthesia of the rectal mucous membrane may precede or accompany this as a result of pelvic congestion. Retroversion also may cause constipation by the mechanical effect of pressure of the uterus on the rectum.

The above, then, are the considerations in my hypothetical case, having taken the digestive disturbance as the starting point, but this is not always or even often the case. Sometimes the digestive disturbance may be the result of reflex action from disease in some distant organ, even from the eye, and this may explain the relation of the eye to uterine disease. I have seen the adjustment of eyeglasses prove of great benefit in such cases.

Again, the starting point may be the uterus or cervix. Digestive and nutritive disorders follow as a result of nerve reaction, and produce various symptoms in organs distant from the pelvis. Besides the above connection between the uterus and kidneys, there may be a more direct influence exerted from the uterus as a center on the function of the kidney, so frequently have I found endometritis associated with renal insufficiency.

I do not think that the profession has attached sufficient importance to dress as an important causative element. Little impression has been made upon the profession or public on this subject.

Displacements of the uterus, as well as all the abdominal viscera, may occur from moderate constriction.

A dress which fits the form snugly, in the narrow zone of the waist, may do great harm, and is the key to the whole matter. Loose-fitting waists if confined by a tight belt may have the same effect.

The stomach and large intestine are most frequently displaced. I have seen the stomach below the umbilicus and the large intestine even in front of the uterus. Floating kidney is much more frequent in women than in men, and this observation is limited to civilized women; and men who use belts instead of suspenders, as blacksmiths, give about the same proportion of displacements as women. This all goes to prove that improper dress is the cause. We see at a glance that the present mode of dress in women has an important influence on the mechanical part of respiration and a marked influence on the abdominal contents. To test practically this influence, apply a tape outside the clothing and note the difference between inspiration and expiration. In most cases it will be found to be about a quarter of an inch, while the average man will change the waist measurement from three to four inches by forcible inspiration and expiration.

The profession has a great and much-neglected duty to perform in the matter of reform in woman's dress. A campaign of education is needed and the profession are first to be instructed. A displaced organ can not perform its function so well as one in a normal position, and thus improper dress may be a fruitful source of digestive disturbance.

The above theories have been deduced from the practical observations in hospital wards and consulting room.

The above class of patients are not strictly gynecological, but uterine pains, backaches and nervous disturbances drive them to the gynecologist.

RENAL INSUFFICIENCY IN GYNÆCOLOGICAL CASES.

BY JAMES H. ETHERIDGE, M. D., CHICAGO.

See page 726.

DISCUSSION.

Dr. SKENE: I think that both the President's address and Dr. Etheridge's paper are so good that instead of opening the discussion we should say "Well done!" to all that has been said. It is an exceedingly pleasant variety to have a contribution from the higher art—medicine—coming in with so much blood and dust as we generally have; and these two papers are of great value, worthy of great consideration, discussion, and attention. And, first of all, I am perfectly well

aware that renal insufficiency plays an exceedingly important part in gynecology, not alone from the medical standpoint, but in its bearing upon our surgical cases. I think I am right in believing that the glare of the footlights of the operating theater has obscured the general conditions of the subjects operated upon, and while we have been racking our brains to know why patients did not do well, knowing that we have been clean in our surgery and have exercised our usual dexterity, I am sure that it is often due to overlooking the condition of the patient, the general condition, and especially the condition of the renal secretion. I believe, also, that many affections of the pelvic organs have their genesis in functional derangements of the nutritive and nervous system. We get a derangement of nutrition involving renal insufficiency, and that leads to a malnutrition which will involve functional derangement of the uterus or ovary, and if we do not relieve the malnutrition we have organic disease of the uterus or of the ovaries. In fact, I think it sometimes happens that we do not recognize the difficulty until we find it necessary to do something surgical for the relief of a disease that never would have appeared had we been more physicians than surgeons. I am sure the condition of the kidneys has a very decided bearing on the administration of an anæsthetic. I wish the doctor had dwelt a little more in detail upon the causes of the renal insufficiency. I have been inclined to believe that we have two points of genesis: First, the invasion, and then we have renal insufficiency secondary to local lesion; ovarian pain—pelvic pain of any kind—and vesical disturbance I am sure will produce a tardy action on the part of the kidneys. Again, while the pelvic organs are all in perfect condition, I believe that because of deranged nutrition we will have functional insufficiency of the kidneys. So that it comes to us from two directions. Then, in reference to the treatment there is much room, I think, for a discussion of that. Of course, if we find it is reflex because of some pelvic lesion, we will have to begin our treatment surgically; if the renal insufficiency is due to malnutrition or indigestion, then we must begin to treat our cases medicinally. Again, in reference to determining the condition of the kidneys, I am very much indebted to the author of the paper for dwelling upon the quantity of urea eliminated as the best evidence of the functional condition of the kidneys. I have so often been frightened by the presence of albumin and a few casts that amounted, after all, to nothing, that it was not until I relied in my investigations upon the quantity of urea eliminated that I got any idea of the real condition of the case. So I think that is a very

important point. Our ordinary examinations in hunting for albumin, casts, etc., are really of no value, because in functional disturbances without any organic disease we will find all the products of inflammation, while in cases of the presence of a lessened quantity of urea it is always evidence of something more than a mere functional occurrence. There was so much of value in the President's paper, in this same line, that I would like to say how highly I appreciate some of the points he made without discussing them. Of course he discussed the question of renal insufficiency, and also malnutrition, and I think that he brought out clearly the point that we have two forms of malnutrition to deal with, or two classes of cases—neurasthenic and what is called lithæmic disintegration and elimination, which is indicated always by oppression rather than by depression. The neurasthenic are oppressed, and the lithæmic are depressed. I will only refer to one case of lithæmia, and that is the rest and forced feeding that is appropriate in cases of neurasthenia, and that very often, when prolonged, leads to lithæmia. I am sure a great many blunders have been made notwithstanding the value of the rest and forced feeding. There is a whole volume to be uttered about the dress reform that the President referred to, and I am glad to see that he believes there is room for improvement in the emancipated woman.

Dr. KELLY: I would like to say a few words on the relation of renal insufficiency to operative cases, which is clearly on the subject which Dr. Etheridge has placed before us. I would like to give you the results of analysis in some of my cases. Unfortunately, I can not find the analyses of one hundred cases which I had. I have gone over this matter for the last three years a number of times, and have recently made a thorough analysis of twenty-five of my cases, taking all gynecological operative cases as they came along, without selection, and I analyzed them to see the average amount of urine excreted before operation, the average amount after operation, and to determine at what date after operation the urine went up to normal. Dr. Clark, who has gone over this work very carefully, tells me that the results of the twenty-one analyzed within the last couple of weeks are practically the same as those in the hundred cases which he has analyzed. He found that, the normal amount of urine being about 1,200 c. c. *per diem*, there was an average in the twenty-one cases, for three days, of 1,027 per day—pretty well up to the normal excretion of urine. The specific gravity also averaged "normal" right after the operation.

Average of Fifty Cases.—First day, 516 ; second day, 556 ; third day, 518 ; fourth day, 582 ; fifth day, 624 ; tenth day, normal.

The average in these cases I have here—twenty-one—is a little less. There is always an anxious feeling in these operations as to whether the kidneys have not ceased working. But we see here that it is natural for the urine to drop down to one third or one half normal, and for a number of days to keep about on that level. There is a very much diminished excretion of urine. With that diminished excretion of urine there remains practically the same amount of solids. It is much concentrated urine, and the urates deposit in a thick layer if allowed to stand. This meets another anxiety which rises in the mind of the operator, as to whether he has tied the ureter or not, finding that only half the amount of urine is being excreted. The explanation seems to be due to the fact that the patients are taking very little water. Dr. Noble has looked into the matter very carefully in regard to the amount of water absorbed by these people, and it seems to be due to the fact that we give them very little water during the first few days, and Dr. Clark suggests that the amount of ether which they exhale also carries off with it a large amount of water. The amount of solids remains practically the same ; it is only a diminution in the volume of the urine. The specific gravity will be as much as 1025, 1030, or even 1040, and continue at that rate for a number of days. I think that a matter of great practical importance in relation to our operative work.

Dr. FORD : The nervous-disease fellows tell us that in all the emotional disturbances these urinary fluctuations take place, and I have been led to believe that the disturbances which we have occasionally seen, and the amount of urine excreted, is due to emotional disturbance as much as anything else. If you will take a hundred cases of neurasthenia in young men you will find pretty much the same condition ; and if you will take the ordinary run of neurasthenics—men or women—you will have the same result. So I would not like to have it presumed that these disturbances are wholly due to the uterine condition, for I believe it is found by men pursuing other specialties that the same conditions occur in emotional disturbances and in neurasthenics generally, and I always thought that this condition in the falling off in the quantity of water was due to the emotional condition which preceded the operation and the large excess of urine passed at that time, and then the kidneys being well flushed out, there was not the necessity for the same amount.

Dr. BALDY : I wish to call attention to one point, and that is that

in many of these cases of renal insufficiency there is a neurotic condition due to gynecological lesion. There is no question but very many of these patients are neurasthenic from a long-standing suffering from other pelvic trouble, and in a large proportion of cases we can readily trace the cause of the original disease; and these cases were not before the trouble neurasthenic to the degree that they are at present.

Dr. WYLIE : I got up not so much to discuss the paper as simply to state that I accept it as being very instructive, to me at least. There is one practical point that influenced me to get up, and that is that I, for many years, have noticed the facts that have been plainly demonstrated scientifically by Dr. Kelly's remarks, and one simple way of relieving my anxiety came about in this way : I found that the use of hot water, hot solutions, was not only a good thing after the operation, but during the operation, to prevent shock. I followed that subject up practically, and it has been for some years a habit of mine to satisfy the thirst and in that way to do away with a great deal of this change in the quantity of urine by systematically giving the patient a drink by the rectum. It relieves the intense thirst and restlessness in a wonderful way. It does not disturb in the least the stomach, except where there is a rectal irritation or disease, but the ordinary case is greatly relieved, and I am satisfied that it will prevent what we call sometimes secondary shock.

Dr. BACHE EMMET : While expressing appreciation of the paper and its value, I want to call attention to the point of preparing the patients against suffering from this accumulation of urea more than we have done. It is quite the common practice to admit our patients to the hospital immediately before operation, and I think in that way we scarcely can give them the preparation. The principle has been thoroughly laid down, and of course carried out at times, and with our private patients we do exercise it, but I think it is greatly to the injury of the patients that they are not longer under observation. The primary shock is greater, and I think it might be readily avoided if we had the intestinal tract in good order in advance. I think these minor points are too much disregarded.

Dr. SMITH : We do not, as a rule, compel our patients to drink enough water. The aches and pains are due to uric acid in the muscles and joints. I myself have suffered agony on the day of my operations, and on testing my urine I found the same result that I found in the patients. I drank a great deal of water, and since then I have been doing as Dr. Wylie has suggested—giving the patient in

jections of water, and she is as well off as I am. A great deal of suffering is caused by want of water.

Dr. ETHERIDGE: I wish to add just one idea. I purposely avoided items of treatment. Each man knows best what he can do. Concerning observation before operation, I would say that as a rule I collect the urine of twenty-four hours and estimate the amount of solids passed. If I find she is passing less than fifty per cent. of what she ought to, I postpone the operation until she is brought up.

The Vice-President read, on behalf of CHARLES JACOBS, M. D., of BRUSSELS, THE GUEST OF THE SOCIETY, a paper entitled

INDICATIONS FOR TOTAL CASTRATION BY THE VAGINA.

See page 733.

(Discussion postponed until other papers on this subject were read.)

Abstract of a paper entitled

VAGINAL HYSTERECTOMY FOR UTERINE MYOMATA AND DISEASES OF THE ANNEXA.

BY WILLIAM H. WATHEN, M. D., LOUISVILLE, KY.

After quoting extensively from letters recently received from Péan, Richelot, etc., giving the statistics of their vaginal hysterectomies and enumerating the indications, he said:

It will not be contended that vaginal hysterectomy should be an operation of election in all cases of pus pockets in the broad ligaments, tubes, ovaries, or cavities formed by adhesions (encysted peritonitis), for there may be complications involving structures so high above the pelvis that they can not be reached *per vaginam*, and without the removal of which the patient can not be cured—namely, extensive omental or intestinal adhesions and appendicitis. These complications, however, are so infrequent that practically all cases are operable *per vaginam*.

As hysterectomy should not, with a few exceptions, be performed if the ovary and tube upon one side are healthy, it may be urged that where we can not positively diagnosticate bilateral diseases of

the annexa, the diseased structures should not be approached through the vagina. This objection is not valid, because an opening into Douglas' pouch is practically devoid of danger, and the diseased side may be removed through such opening without disturbing the uterus; if it can not, a cœliotomy may be immediately performed and, if necessary, the vaginal opening left to give more perfect drainage. In cases of cœliotomy where a pus sac can not be enucleated without rupture, a previous opening into the vagina would tend to lessen the mortality, because the pus by gravitation would go in that direction, and by irrigation from above might be immediately forced into and out of the vagina without soiling the peritonæum, or necessitating the use of abdominal drainage by the glass tube or gauze.

Where it is the correct thing to attempt to separate adhesions of the intestines or omentum this may be done about as well through the vagina as through the abdomen; but where adhesions are firm and extensive, shutting off pus cavities from the abdomen, it is often the wise thing to disturb the intestines as little as possible, for they are so arranged that they may cause no subsequent trouble, allowing the gas and fæces to pass uninterruptedly. But if cœliotomy is performed in these cases the adhesions must be separated, the peritoneal cavity thereby soiled, probably causing local if not general sepsis, and if the intestines have fortunately escaped serious injury they are left in a condition that predisposes to secondary irregular adhesions more dangerous than the primary adhesions. All experienced cœliotomists are familiar with the fact that in secondary operations in such cases the adhesions are often almost universal, and may cause death from obstruction. While the dangers of wounding the rectum, bladder, or ureters in vaginal hysterectomy are not greater than in cœliotomy, if these structures are injured the mortality in the former is not twenty-five per cent. of the mortality in the latter, because the perfect drainage prevents peritoneal infection. The bladder or rectum may often be immediately sutured, and if the ureter is injured and can not be repaired it may be subsequently implanted into the bladder.

When the tubes and ovaries are removed the uterus can serve no useful purpose, and may remain, or finally become, an offending member of the body. In many cases where the tubes and ovaries are removed the woman is not cured and may not be benefited, but when finally the uterus is removed all symptoms disappear.

As tubal or pelvic suppuration is frequently caused by continuation of an infection in the endometrium, the uterus may remain a

diseased organ that can not be cured by curetting or other intra-uterine treatment. In other cases, where the uterus shows no positive signs of disease, the removal of the annexa does not relieve pain, because the nerves of the uterus or surrounding ganglia are diseased. If the uterus is not removed, even if not diseased, it may become re-infected by fresh exposure, or become displaced and adherent to adjacent structures, or carcinoma may develop. As about twenty per cent. of all cases of salpingitis are tubercular, with probable tubercular involvement of the uterus, the latter organ in such cases should be removed with the tubes and ovaries.

The following are some of the reasons why vaginal hysterectomy should be preferred to cœliotomy :

1st. There is less shock and more rapid and complete convalescence, the patients usually sitting up within a week and walking a few days later.

2d. In pelvic suppuration there is less danger of septic infection from soiling the peritonæum.

3d. Absence of suture or mural abscesses and sinuses following the use of drainage or an infected ligature.

4th. Fewer adhesions following operation.

5th. Immunity from ventral hernia.

6th. A lower mortality, fewer post-operative complications, and a more complete restoration to health in a relatively greater number of cases.

The above are facts, as shown by statistics of the most successful operators in cœliotomy and vaginal hysterectomy; and in vaginal hysterectomy many of the cases were inoperable by any other method.

It will thus be seen that theoretical objections to vaginal hysterectomy, unsupported by facts and reasons, are worthless when tested by intelligent experience.

The success of the operation depends upon our ability to control primary and secondary hæmorrhage, to avoid injury to the bladder, the ureters, rectum, and intestines, and prevent soiling the peritonæum, all of which may be accomplished by proper attention to the details before and during the operation. In pelvic suppuration the vaginal incision should first be made behind the cervix and continued at the base of the broad ligaments on each side half an inch or more beyond the cervix, and if necessary the posterior vaginal wall should be split to the bottom of Douglas' pouch. Enucleate with the fingers and, if possible, open the pus cavities and drain and irrigate them before exposing the peritonæum. This can be done in cysts or in cases of sup-

puration in the broad ligaments, or in other forms of pelvic suppuration where the pus has been shut off from the peritoneal cavity by plastic exudations and adhesions. In these cases the pus may be discharged and the cavities irrigated and disinfected without hæmorrhage or the necessity of using a ligature or clamp. The hysterectomy may then be completed without danger of infecting the peritonæum. I have demonstrated this positively in cases recently operated upon.

If the pus pockets can not be reached and treated in this way the peritonæum may be opened and the tubes and ovaries explored with the finger, at the same time introducing a reflux irrigation tube above the diseased structures and allowing hot water to flow steadily so that in the event of accidental or intentional rupture the pus will be forced into the vagina.

In operating for myomata the field of operation should be thoroughly exposed, so that we may see the tissues we cut. Morcellation should not be attempted until the uterine arteries have been clamped. As morcellation is continued and the broad ligaments are divided, an assistant should make firm and continuous traction with a strong volsella forceps, which is an efficient means of controlling hæmorrhage. In hysterectomy for broad-ligament myomata we should usually morcellate the tumors before we remove the uterus, but when myomata are developed in the walls of the uterus we may morcellate the tumor and the uterus simultaneously as may be indicated.

In conclusion he reported some interesting illustrative cases upon which he had recently operated for bilateral pelvic suppuration. These were all unfavorable cases, and some of them not operable by cœliotomy. They all made uninterrupted recoveries, sitting up within one week and walking a few days later.

(Discussion postponed, as above.)

CONSERVATIVE SURGICAL TREATMENT OF PARA- AND PERI-UTERINE SEPTIC DISEASE.

BY FERNAND HENROTIN, M. D., CHICAGO.

See page 769.

(Discussion postponed until afternoon session.)

*Afternoon Session.*SPECIMENS REMOVED BY VAGINAL AND ABDOMINAL
HYSTERECTOMY.

BY R. STANSBURY SUTTON, M. D., PITTSBURG.

See page 744.

DISCUSSION (ON THE FOREGOING PAPERS).

Dr. MONTGOMERY (in the affirmative): Had we no other papers than the three that have been read before us to-day, the Association, I am sure, would be well repaid for its journey to Baltimore in the discussion of this subject, and certainly no other will have greater importance on the influence of the profession, and in its influence on the welfare of those who come under our care. I am sure that we should all come to the consideration of the subject with minds unbiased, and endeavor to consider it from the standpoint from which it has been presented. What we all desire is results, and these results should be those which are for the best interests of our patients, not only in the immediate but in the final result. When we consider the statistics that have been presented to-day—of four hundred and three patients treated by one gentleman with a mortality of but 2.9 per cent., and a mortality in the operations of Richelieu of a little over 4.16 per cent., and consider also that in these last cases of his, of a series of one hundred and twelve successful cases not a single death has occurred where the operation has been done, and some nineteen cases for the complicated inflammatory conditions—I am sure you will agree with me that that is a result which is exceedingly desirable. Is it questionable as to immediate results whether we can secure as good by any other operative procedure in the treatment of such cases. Possessing, then, such results as we have here, about three per cent. mortality in a large series of cases, it comes for the consideration of the Society whether the operation of vaginal hysterectomy should not be substituted and preferred to the abdominal method. If it should not, there must be of course certain considerations and conditions which render the abdominal procedure more favorable and more desirable either in the ultimate results or the influence on the life of the individual. When we consider the result of the operations that have been pre-

sented—a series of four hundred and three cases, with but nine cases of fistula, five of which were intestinal, three vesical, and one ureteral; and when we compare these with the same results in similar classes of cases, where we know that there is danger, in spite of every precaution that we can take, of infection, of subsequent inflammatory condition, of formation of fistula in drainage, or through retention of this infected ligature (a fistula that will remain until the ligature itself has been cast off)—it certainly shows an infinite advantage in favor of the method that has been suggested. When we come to consider the advantages of the operation itself, in the absence of the disadvantages of abdominal incision, of the long-continued convalescence, of the abdominal cicatrix, of the subsequent danger of ventral hernia—these all being avoided—it would certainly look to me as if the operation of vaginal hysterectomy is the preferable procedure. And in addition to the advantages of the operation itself we have the advantage that has been stated in the papers read to-day: that the vaginal operation may be an exploratory one; that in beginning the procedure of the performance of such an operation it does not necessarily indicate or demand that its beginning shall result in a radical operation; that we are not obliged, because we have begun an operation which may result in hysterectomy, to continue it to this end; that it enables us to explore the condition of the pelvic viscera to determine the extent of involvement, and only in those cases in which the diseased condition is such as indicates the necessity of the removal of the viscera is the operation of vaginal hysterectomy carried out. When we consider that after the removal of the ovaries and tubes the uterus is practically of little advantage, that in many cases, especially in which the ovaries and tubes are secondarily involved, the uterus remaining is a source of danger, is a source of discomfort, and that oftentimes the condition of the patient is aggravated so long as it remains, it seems a preferable procedure that the entire organ should be removed, where it is necessary that both ovaries and tubes should be sacrificed. I would not go, however, to the extent of the gentleman who read the paper, in saying that in every case of bilateral disease the ovaries and tubes should be sacrificed and the uterus removed. Nor would I be willing to admit that in every case of ectopic gestation the uninvolved tube is necessarily diseased, for I have seen, and I am sure all of you have seen, cases in which the woman has had one ovary and tube removed, or in which there has been an ectopic gestation occurring on one side and remaining in the pelvis for a number of years, the woman subsequently having given birth to a child. So that where the patient

has an ectopic gestation on one side I should not consider it as a justifiable procedure to extirpate the uterus. And, indeed, it is a matter more of question whether the vaginal incision is as safe a method for the reaching and treatment of an ectopic gestation as would be an abdominal incision. As to the treatment of malignant disease, I would unquestionably agree with the gentleman as to the wisdom of removing the uterus through the vagina; also as to those cases in which the uterus is the seat of fibroid growths attaining to such a degree as evidently rendering the subsequent retention of the uterus impracticable. I certainly would not advise or advocate the removal of the uterus in every case in which fibroid tumors exist, for I believe, with some of the gentlemen who spoke yesterday, that the uterus may be treated, that fibroid growths may be removed, either of the submucous or subperitoneal variety, and leave a healthy uterus subsequently. The great advantage of the treatment by the vagina is, as we have said, that it enables us to treat those cases in which the disease has not extended to such a degree as to need the entire extirpation of the uterus and removal of the pelvic organs. It enables us to drain, to give vent to discharges, either in the early stages or in the later development of the trouble, and leave the patient subsequently functionally well. I have seen a number of patients in whom there has been development of inflammatory trouble, involving one or the other side of the pelvis, where the draining of the pelvis through the vagina, giving vent to the accumulation, washing out the cavity and packing subsequently with gauze, resulted in the absorption of the exudation, in the obliteration of the diseased condition, and the restoration of the functions of the individual. Indeed, I question whether there are not many cases which we have formerly subjected to operation, to radical procedures, that were subsequently not only unimproved, but in many cases, possibly, they suffered subsequently from inconveniences, that were more distressing than the condition for which the operation was done. Without doubt there are many patients in whom possibly inflammatory conditions exist, in whom there is a tendency to the recurring attacks, where the diseased ovaries and tubes may be removed, in which the patients subsequently suffer from a series of unpleasant phenomena, which could have been avoided had a plastic operation been done, had we endeavored, instead of the radical operation of removal of the entire organ, to leave a portion of an ovary, or a portion of a tube even, so that the patient, as long as menstruation continued, would have hope of progeny.

Dr. BALDY (in the negative) : I would like to draw the line in the

discussion hard and fast, and I want to draw it distinctly and clearly between the advantage of doing hysterectomy, either by the vaginal or abdominal method, and propose to ignore to a large extent all other elements raised in the papers. I will qualify that by saying that I will exclude from my remarks that class of puerperal septicæmia in which there is free pus in the abdominal cavity of the pelvis. That one variety I wish to exclude. On the other hand, I want to include in my remarks every variety of case spoken of by Dr. Jacobs in his paper—cancer, pelvic inflammation, fibroid tumors, prolapsus, or what not. What are the advantages or disadvantages offered by the gentlemen who are in favor of vaginal hysterectomy against the abdominal route? First, the abdominal incision and the scar, and the subsequent chances of hernia. Right here allow me to admit that that is a proper objection, and it is one of the disadvantages of the operation. It is the greatest disadvantage. When, however, thirty-three per cent. is put down as the number of hernias resulting, I do not think there is a gentleman present who for one instant will grant it, nor will they grant three or two per cent., certainly not as hysterectomy is done in the hands of the gentlemen who are doing it from above. As to the convalescence: By vaginal hysterectomy the patient gets up in five days. Granted. Abdominal hysterectomy pretends to no such time, and I consider it one of the greatest disadvantages that could possibly be offered to a patient who has been so sick as to need a hysterectomy, to be allowed to get out of bed under a month, independent of hernias or anything else. I consider that month in bed invaluable to my patient. As to vaginal hysterectomy, we are asked to deal with this, and I shall deal with cold facts. In the first place, it will take one third the time to do above what is done below. Time is against the vaginal operation, and you must all admit that time under ether is a disadvantage to the patient. As to the difficulties of the operation: Every man I have known to do hysterectomy vaginally, and in every case I have done myself, my experience in doing it shows that it is by all odds the more difficult operation of the two. It is a harder operation on the operator, in my opinion. As to the dangers: You have had put before you a series of nine fistulas in four hundred and three cases. I can not put as large a number of statistics before you as four hundred and three, but in two hundred and thirty-four cases there has not a single fistula resulted. A fistula is not within the possibilities in the operation, and in that series six had fistulas prior to the operation, and were cured by it. If the fistulas do occur, what results? An abdominal section to cure the fistula. Or what is there

to a patient in a ventral hernia as against the risks and dangers of a nephrectomy, or a subsequent resection of intestines—two of the most dangerous operations we have to do with? Dr. Jacobs does not stand alone; Saigon has nine bowel and bladder lesions. Every man doing vaginal hysterectomy has them. It is a common fault; it is infinitely more common than hernia in the abdominal route, and it is infinitely more dangerous, to be sure. Therefore the abdominal operation has the advantage. As to the diagnosis: In the vaginal route, if you have made a mis-diagnosis, I grant you you may start your operation as exploratory. So you will from the abdomen. The question arises, By which one practically can you best decide to stop your operation and do nothing or go on? There can be no question in the minds of those who have done both operations that it is infinitely better and safer, from the point of view of the patient, from above. From above you would never remove a pregnant uterus and not know it. You might do it, but you would do it knowingly. From that point of view the operation above has the advantage infinitely. As to the chances of completing your operation, all these gentlemen admit that they leave ovarian tissue, tubal tissue, and at times uterine tissue which it was impossible to remove; those of us who do it above—never! Every bit of tissue disappears, and when the operation is completed there is not a vestige of it left. From above, the operation has decidedly the advantage in that respect. As to the mortality, they have claimed it is the safer operation, and the claim has been made that we must come to the vaginal route because it is safer. A collection of seven hundred and twenty-four cases of the vaginal route, including such names as Saigon, Pèau, Forsch, and Jacobs, gives you a mortality of 4.6 per cent. On the other hand, in direct contrast with that stands a collection of two hundred and twenty-four operations done by American operators from above, with a mortality of 2.7 per cent., including such names as Polk, Pryor, Krug, Penrose, and Kelly. Now, it does seem to me that with the few objections against the abdominal route the objections against the vaginal route are so overpoweringly more numerous that there can be no question of choice when this mortality record stands as it does to-day. It must settle the question. It stands directly in contrast, with only half the mortality of the vaginal route, and the time has come when it can not be said to us that the vaginal operation is a safer one than the operation above. One more point: It is said to us that cases can not be done by the abdomen that can be done by the vagina. I know of but one case on record where that has been tested. It was refused by an

abdominal surgeon and was operated on by vaginal hysterectomy, and the woman was dead within an hour after the operation. That was the only case in which the two were brought into direct contrast, and that will always be the result. What can be done below safely can be done above safely. On the other hand, you can do a complete operation above that you can not do below.

Dr. POLK : I consider this discussion the most important that this Society has taken part in in many a day, and the most important that will be presented to it for many a day to come, for the reason that we have here presented to us an opportunity to, in a measure, settle the greatest remaining question in gynæcology. Naturally there will be questions that will arise as long as medicine and surgery are intended to save human life. In the direction of better operative work upon the appendages the infrapubic direction of approach *versus* the suprapubic is up for judgment. Now it is not to be supposed for one moment that it will be settled in this discussion, and all that we are here for to-day is to endeavor to throw such light upon it as our individual experience warrants. Belonging to the class of operators represented here by Dr. Baldy in his remarks, I have concluded to make a sharp turn for the purpose of satisfying myself as to the possibilities of the infrapubic work, and I trust that you, sir, and the members of the Society, will pardon me for using the personal pronoun ; but this is my particular personal experience. I began this work along all of the lines that had suggested the suprapubic work, and my remarks will be to those various subjects. Unquestionably any man can do infrapubic work better who has had the experience of suprapubic work, and I take it for granted that this infrapubic work would not have had its revival if it had not been for the magnificent work that was accomplished by working from above. It is entirely idle, from my standpoint, to state that the infrapubic is as easy as the suprapubic. The ideal position for the surgeon in working in the pelvis is unquestionably that which can be obtained by the Trendelenburg posture, and any one who has accustomed himself to do work in that manner will be very loath to undertake to do work from below if he confines himself solely to that class of cases which we have in our minds mostly when we come to consider the infrapubic work. But if we broaden the field and let it be understood that information which has heretofore been sought above, and relief likewise, can be obtained below, I think we approach a little nearer to the true gist of the question. Dr. Jacobs and the others will therefore pardon me if I endeavor to broaden this in the manner suggested. No one knows better than

the members of this Society the amount of work, both in physical labor and literature, which has been expended upon the reposition of the adherent, displaced uterus—what with the persistent application of hot water, and tamponing still going on, we were left in the lurch. A simple incision in the vaginal route and the introduction of two fingers will at one sitting do away with all of that kind of procedure, and absolutely wipe it from our text-books as measures to be pursued. And I take it that that can not be gainsaid, because it is almost a self-evident proposition. The next point is in reference to the conservation of diseased appendages by removing the diseased structures and leaving such portions of the healthy structure as have been considered practicable by many of us on this side of the water. This is a difficult procedure if you attempt to do it through the posterior fornix, but you can do it in very many cases through the anterior fornix if you will make your approach between the bladder and the uterus and by a process of anteversion bring the appendages in reach. This is solely applicable to cases in which you propose to do that kind of conservative work which we on this side of the water are in the habit of doing, and which certainly gives us admirable results. In very many of these cases you can reach those appendages sufficiently well behind to enable you to do the work. They can all be reached through the anterior fornix. As to the treatment of small fibroid growths which are comparatively without adhesions and which rest in the lower portion of the pelvis, their removal by the infrapubic work is one of the simplest problems in surgery. I do not think it can be said that it is one of the simplest in surgery when you make those removals above, notwithstanding that the mortality rate is so small. It is simpler below than above. Then we come to those cases of bilateral disease of the appendages, such as hydrosalpinx, hæmatosalpinx, salpingitis, and pus sacs. This class of cases, where we can convince ourselves that the conditions are past all hope of any other kind of treatment, where we can convince ourselves (as in hæmatosalpinx and hydrosalpinx) that there is no chance of restoring these structures to their normal condition—they pass out of the category of any attempted conservation and come down to the level of the class of cases spoken of by Drs. Jacobs and Baldy—cases demanding entire removal. I take it, while some dispute the proposition, that a good many stand on the ground that if you remove the appendages of a woman, it is just as well to take the uterus along with it. This class of cases belongs largely to the category enumerated by Dr. Baldy.

Dr. Baldy's cases I have no doubt cover this kind of condition, as well as that kind of condition represented by ovarian abscesses and tubal abscesses, and conditions of peritoneal structure, the result of oft-repeated inflammation, until you have formed a large, conglomerate mass of pus, and of inflammatory product, with coils of intestines matted thereto, attached possibly to the bladder and to the pelvic wall, making a condition of things difficult to deal with anywhere. Now, then, in attempting to deal with this class of cases I think it is wise to separate them. Under this first heading you have a condition of things which resolves itself into the simplest kind of vaginal hysterectomy, because the tubes and the ovaries, although they are so diseased as to be practically useless, are yet not sufficiently adherent to surrounding structures to make their removal a piece of work by any means difficult. When, however, you come to deal with the second class of cases, it seems to me that those who attempt to do vaginal hysterectomy make a mistake if they endeavor to do the radical operation always. A partial operation, the evacuation of the pus as much as possible, so as to give the patient an opportunity to recover from the effects of the infection from which many of them suffer, to be followed by the radical procedure, is in my experience the wiser course to pursue. And I do not believe, if followed along these lines, that the mortality will amount to so much as that which has been suggested by Dr. Jacobs.

Now we come to a class of cases enumerated by Dr. Baldy in his paper yesterday—those in which you have puerperal infection. This forms one of the most interesting set of cases that will ever come before us, for the simple reason that we are all at sea in reference to any possible plan of procedure toward them. And I do not mean cases of this kind which can be met by the ordinary cleansing of the interior of the uterus. I mean those cases in which we recognize the advance of sepsis to a point which to our trained minds is an indication that the patient has reached a point where it is a question between her vitality upon the one hand and the poison upon the other, and where, so far as the ordinary applications on the interior of the uterus are concerned, they have been tried and found wanting. What are we to do? I think we must all agree that that is a class of cases in which, should we determine to do operation, a line of procedure may be followed which has been suggested by Dr. Henrotin—viz., exploring through the posterior *cul-de-sac*; the removal by that direction of the appendages, if they be the members that are at fault, or even the removal of the entire uterus. This, then, is a route which under the

conditions in question will certainly furnish us opportunity to do work with less risk to our patients than if we attempt to work from above, and it is presented upon the broad principle which I think we all must recognize as true—that, given an operation upon a patient, suprapubic or infrapubic, in which the amount of time consumed is the same, that done below is accompanied by less shock than that done above; and where you have a uterus recently pregnant, in a vagina which has all the relaxation incident to the changes of pregnancy, a uterus situated in such a place can be removed in the shortest possible space of time—in much less time than it could be working from above

And now in reference to the points raised by Dr. Henrotin in his paper touching the value of exploration. Exploration we recognize as a most important means of diagnosis in various obscure pelvic diseases. It may be that the condition is such that it can not be reached from below, as in those instances of inflamed masses filling up the entire space, so the suprapubic exploration may be a necessity; but taking the average case which comes before us for exploration, in which we must determine accurately whether the ovaries or the tubes are the offending member, there can be no question as to the marked advantage of the infrapubic approach to such structures over the suprapubic. Therefore we do ourselves injustice if we do not admit at once the great value of the vaginal route as an approach to the whole of the pelvic cavity. The point raised by Dr. Henrotin is the special value of this route as a method of treating the early stages of inflammation of the uterus and its appendages where we have reason to believe that the disease has extended beyond the organ and involved the peritoneal cavity. I think this Society and the profession at large owes Dr. Henrotin a vote of thanks for bringing this point out so strongly as he has done in his paper. We have all been in the habit of incising these masses after they become encysted, after they become abscesses; but his proposition makes it possible for us to prevent any such formation as that and bring inflammation of the pelvis before us upon the same level as inflammation of the subcutaneous connective tissue, shows us that we can attack the inflammation beginning in that region and balk it and save the appendages from the destructive changes which are inevitably connected with the prolongation of that process. Therefore, if this Society at this meeting had done nothing else, if the work in gynæcology had advanced no other proposition of value, that one would be sufficient to compensate us for all we have done. I tell you, gentlemen, that this proposition makes it possible for us to-day to so limit the possibilities of pelvic

infection that the operation advised by Saigon and Pèan, and so brilliantly carried out by our friend, will be wiped absolutely from our *repertoire*. (Applause.)

Now, in relation to fibroids. Dr. Sutton could have removed any of those tumors, except one or two, by the infrapubic route, following out the suggestions made by himself and by others, and I consider it an enormous advantage to remove tumors of that sort from below. And in this connection I wish again to draw attention to the fact that while we acknowledge in the fullest and freest manner possible the brilliant work which has been done by those gentlemen who perfected the technique of this process upon the other side of the water, here in our midst we have the individual who made it possible for that work to be done even by them, for taking these structures within the cavity of the uterus simply applies to removing the uterus *in toto*, and gives to them an operation which, so far as efficiency is concerned, is as good as anything ever done above the pelvis, and a patient whose condition afterward is infinitely better. (Applause.) Now, one more point—a matter of detail in connection with the technique of the operation. I am sure Dr. Jacobs as much as anybody else will take in good part the criticism which I am about to make upon the work which I had the honor to witness him perform. We know perfectly well that there are two methods of doing this work—one by clamp and one by ligature. My observation in my own work, as well as observing that of others, has led me to the conclusion that whenever you have got work beyond the pelvic outlet, whenever you have got work deep in the pelvis, you require all the room which can be obtained, and with your vagina full of forceps, or even half or one third full of forceps, it becomes a difficult thing for you to manipulate. The suggestion, therefore, which I have to make in this connection is, that wherever the case is of a kind to make it certain that it will be necessary for you to work deeply, you endeavor to secure all of your bleeding points low down by means of ligatures, leaving the use of the clamp to the higher vessels and to the later stages of the operation.

Dr. GORDON : I have worked from above and from below. My experience from below has been limited, and so far as I have had that experience it has not been gratifying to me. I am perfectly willing to concede to Dr. Jacobs and the men who operate as he operates unbounded praise. He certainly has presented a list of cases here to-day that commands my admiration. The results have been gratifying, and had this been told to us ten years ago we would have said

that we could not possibly believe it. I do believe everything he has told us to-day; but believing that, I still shall adhere to my suprapubic operation as a rule. I do not believe that we can do as well by the touch as we can by the sight. I do believe with Dr. Baldy that we can make our diagnosis better from above than we can from below. I believe also that when we have once entered the abdominal cavity we can do anything from above that can be done from below. I believe that we are to-day, with our improved skill and with our very much enlarged experience, doing as good work from above as can possibly be done from below. I think that there is an objection to pulling down ovaries and examining them as Dr. Polk has suggested, either in front or behind. I liked the doctor's suggestion of pulling them down in front better than from behind, because if you do draw them down from behind and yet you do not want to remove them, you have done a thing there which you can not possibly repair in the way of putting them back and keeping them there. You get a prolapsus from an operation of that kind which you can not possibly rectify after you have closed your vaginal opening and decided not to remove the appendages. I can understand that there are a good many things connected with it that can be done easily by men who are doing the intravaginal operation, but I can not conceive, with my limited experience of the intravaginal operation, how you are going to possibly disentangle a great many of those cases of adhesions to the uterus, the intestines, the bladder, and everything else, and especially the point made by Dr. Baldy, that where you have a fistula already existing you can repair that so much better from above than from below. You can not drag down the rectum at the point of the sigmoid flexure and repair your fistula, as I have had to do in the last two weeks. It seems to me that the advantages are decidedly in favor of the suprapubic operation.

Dr. WYLIE: I have for so long a time been an advocate of the suprapubic operation that it would be a matter of heresy if I were to desert it, and I am glad to say that I do not feel that I am going to desert it, although I must say that I have been impressed not only with what I have seen and known since Dr. Jacobs first visited this country, but even before that, that it was a question, and the only way to settle it is to decide, when the case comes before you, as to which is the better method. I do not accept his statistics and figures, taking the class of operators there and the same class in this country—that the suprapubic operations have been as successfully done. I can state that in my first fourteen cases I lost three; in my first fifty, two

more, making five; but in the next sixty-one consecutive cases I lost nothing, and I had very few difficulties, such as hernia and trouble of that kind. Since then I do not believe that in my whole number of cases by the suprapubic method the loss would exceed in private practice one per cent., or more than two or three per cent. in Bellevue Hospital. I have had one or two cases where we stopped at taking out one side, on account of the general condition, but I never opened a single woman that we shut up on account of adhesions, and I do not believe that I would. I confess that my experience with the intra-abdominal method is not very great. It includes seventy-four consecutive cases and only one death, but I admit that they were practically selected cases—that is, they were done almost entirely for cancer of the cervix or of the body. The one death that I had was from Bright's disease, so that I can not claim that my suprapubic work is better, so far as statistics go. I do not believe it is as good if I include all the bad cases on which I operated from above. I believe the question is one to be settled by the future. A man who does an operation well and succeeds at it dislikes to take up another for fear he will not do it as well. There is no question but that a man who has been trained in general surgical work will nearly always naturally prefer the abdominal method, whereas the trained gynecologist has the advantage in the other way—that is, by the vagina. I consider the operation by the vagina much more difficult where the adhesions are high. Where they are low I will adopt it, and have done it successfully. I believe that there are other questions, even in taking out the uterus, that must be settled only by time. The work has not been done long enough to settle all the questions as to the future results.

Dr. JANVRIN (of New York): It may be somewhat presumptuous in me to attempt to discuss a question in which, I must confess, as far as the vaginal route is concerned, I have had no experience, except in such cases as I could remove entirely. I have, however, had a pretty good experience in the removal of cancer of the uterus by that route, going back some ten or twelve years, for cancer and sarcoma. Those cases which Dr. Jacobs brings forward as the first in his list are pre-eminently, I believe, subject to that method of operation. I believe that any growth, cancerous or otherwise (and I have acted on that principle absolutely), which can be removed *per vaginam* entire, should always be removed in that way. Having had no experience with morcellation, I have nothing to say on that point. It has been my luck to remove during the past year one instance of

a sarcomatous uterus from a very large patient, which measured six and three quarter inches in depth, four and five eighths in breadth, and three and a half, or a little over, antero-posterior. I have also removed quite a good many cases of uteri with small fibromata attached, similar to those presented by Dr. Sutton. All of those cases, I believe, are cases which should be removed *per vaginam*. In reference to the removal of cases of cancer *per vaginam*, or through the abdomen, I believe that this rule, which has guided me thus far in my work absolutely, is a safe rule, and one which is not only safe but justifiable—that any uterus which can not be removed *per vaginam* is generally so infiltrated into the surrounding tissues that the operation should not be performed at all. I have never met with any case of cancerous disease which demanded a suprapubic operation. Possibly I have been fortunate in the cases I have met, but that is my opinion, and I thoroughly believe that unless the uterus can be removed with all of its disease—that is, in the cervix or in the uterine cavity, and at any rate not infiltrated beyond—all those cases should be removed by the vagina, and that all other cases in which the glands around have become infiltrated should be left alone. There was one other point which Dr. Jacobs brought forward, and that was in reference to the removal of extra-uterine tubal pregnancies *per vaginam*, and in connection with that he made the statement that usually in such cases the other tube was affected. I presume it will be remembered that about nine years ago I had the pleasure of reading a paper in Washington, supplemented two years later by another paper on the same subject, in which I was bold enough to make the statement that I had recognized tubal pregnancy as early as the fifth or sixth week, and in my first paper, although I had no cases to report by way of operation, I recommended the removal of the tube with its contents. The paper fell upon rather a cold field. I am not aware that up to that time the ground had been taken on that point. Of course we had all recognized the propriety of operating on cases in which there was hæmorrhage. In the second paper I did report some cases. Since that time I have reported quite a number of other cases, in which I operated, of course, through the abdomen, in which the diagnosis was made prior to rupture. Now, I can not say that either of those cases has gone on and conceived since that. I know this, however: that I examined the other tube at the time of the operation, and, as far as I could judge, there was no disease. I can say that the patients are living, and that they have continued in good health. Therefore I say that in cases of tubal pregnancy, recognized at an early stage, there

should be no disease in the other tube, and I believe that it rarely, if ever, does exist.

Dr. MCGONEGAL: I have only to thank Dr. Jacobs for his interesting paper, and if I draw any conclusions from it that are not correct I hope he will say so. I understood him to say that he would remove the uterus in salpingitis, etc., in cases where there was no pus. Now, gentlemen, it has been a principle with me so long to hold on to those ovaries and Fallopian tubes that have nothing more than an inflammatory process, are nothing more than swollen tubes and ovaries, and I have had experience enough to be convinced that those cases can be cured by opening them from above, or, as has been suggested today, by opening them from below, that I want to say that I do not think it is a justifiable operation to remove the uterus for salpingitis, etc., without pus. In cases where there is pus the procedure is one that is justifiable either from above or from below. It is now, and no doubt will always remain, a matter of personal judgment with the operator as to the route he shall choose. When results are so good in the hands of operators as they are in the hands of Baldy, Polk, and Kelly, from above, it is rather hard to get those men convinced that they should operate from below. However, Dr. Polk has turned around a sharp turn, and is going to get as good results from below. Nevertheless, there is a condition in operating from below that strikes me as making it very difficult in doing this vaginal operation. I had a patient come to me with pus in the tube and the pelvis. I determined to open the patient through the abdomen, and when I had opened the patient I found the adhesions were very great, off to the right side. After clearing away my ground I found the difficulty arose with the appendix, and it extended into the Fallopian tube. I was able to free my adhesions, and took the Fallopian tubes, ovaries, and uterus out. The patient afterward recovered without any fistula. Now, it occurs to me that in a case of that kind, where the appendix is the origin of the disease, where it is intimately attached to the Fallopian tubes, that the gentleman who operates from below and pulls on that appendix is apt to pull it out and leave a hole in the bowel, and put a clamp there and leave a fistula. In that way I believe many of the fistulae which follow the operation from below are apt to come. In regard to the fistula from above I have had some experience. In seventy-two cases of hysterectomy I have had a case of fistula from above. I have had a case of fistula resulting from a ligature which was tied into the broad ligament, but not from the bowel. Therefore I agree with Dr. Baldy that in that way you can guard

against these fistulæ and so manage the case that you are not liable to have any. I believe that in these cases of acute salpingitis and chronic salpingitis Dr. Henrotin has opened up a way which will make it additionally easy to settle them. Dr. Polk spoke to me of that operation on the way down, and he thought that this was an opening that would save us. But we all know that the cases do not come to the men who do those things in time. I doubt if the conclusion reached by Dr. Polk to-day will be carried out, for the reason that not all men have got his and Dr. Henrotin's skill, and the men from the country will still supply us with the masses of pus.

Dr. LUSK: I think that we ought to congratulate ourselves that we have two methods which are not to displace one another. I am sure that all of us within another year will be agreed that fibroids of medium size, and all cases where the pelvic organs are matted together and the uterus and tubes have to be removed likewise—that they must all be removed from below. As to whether the cases of pus-tubes which do not require removal of the uterus will in the end be removed from below is a matter of question in my mind. I am sure that we all would like to carry out as long as we live the principle Dr. Polk has laid down in regard to the saving of tubes, and it seems to me certain that we will save the uterus and the healthy tube more often if we go from above than from below. In cases of extra-uterine pregnancy I can speak with a great deal of positiveness. I think there is no class of cases in which the uterus and the remaining tube are so apt to be in a healthy condition and remain in a healthy condition as in this class. I do not remember in the various operations I have performed for tubal pregnancy any case in which the woman has not got up perfectly well, with one exception, where, three years after, the woman had carcinoma, but it had nothing to do with the operation. I think there was a little mistake in Dr. Jacobs' paper in asserting that the uterus and tube must come out when we operate for tubal pregnancy, and if we are going to leave the uterus and tube I am sure we will do better work from above than we will from below. But my reason for getting up was chiefly this: When we look over the recent statistics we find that Richelieu and Saigon and all the rest of them have had very serious mortality in their first fifty cases, and when they come to take the six hundred cases, they are including in them their later results. I think we must all bear in mind that we are dealing with human beings, and that as we change from one method to another we should begin with the simple and easy cases, and as our experience increases we can take the others. I

speak of this because the general practitioner is the one now that pushes us chiefly. He wants an operation in every case of sepsis, and he wants it done by the vaginal route. I think that when we have a case that we are absolutely certain we can do better from above, that ought to settle it, so far as we are concerned, and it is little by little that we will reach the great success obtained by Jacobs and the others of the limited number of operators. Certainly the vast number of operators that I have spoken to in Europe—Martin and others—still prefer the abdominal route as a matter of choice. One word in regard to a class of cases in which the operation is to be performed. Much has been said about operating below in cases where there is pus. This week I have been asked to see a case in relation to taking out a pus-tube which is slowly pouring poison into the system. I found an ordinary case of what we term cellulitis, with a temperature of 99.5° to 100° in the morning, and rising to 103° in the afternoon, and I am able to say that that woman, if treated in the ordinary manner and kept still, will get well. Now, I could say to the family that they could have an operation and have the tube removed, and the patient would get well. But what would we do with a member of our own family? That is a matter we have got to consider. When I talked to her family physician I found curious notions. I found that in case she was suffering pain he must not give her something to relieve it, because it would "mask the symptoms"; he must not give her antipyretic, because "it masks the symptoms"; you must give her something that kills the bacteria in the blood. I think that in all that class of cases we have got to remember that one hundred per cent. of them get well if they are let entirely alone, and that when we do these operations from above we have got to do them remembering that we have a great responsibility upon us, and remembering that there are two sides to a very large question.

Dr. COE: Dr. Lusk has touched upon a very important point, and it is the relation of this operation to our private patients. This fact was emphasized in my mind by reason of three patients in private practice in the past three weeks stipulating that they should have the vaginal operation, if any. They had to have that operation or none at all, and I think that is a point to be borne in mind. The patients are becoming educated in gynæcology as well as the specialists, and a great many patients absolutely decline to have a laparotomy. Dr. McGonegal touched upon a most important point, and that is the complication of pelvic troubles with appendicitis. We have adhesions of the appendix in many cases that are not recognized

during the vaginal operation. The appendix is frequently injured, and, as the doctor said, there is a source of trouble. In some cases we are able to make a diagnosis of appendicitis with this complicated pelvic disease, and here we most certainly will resort to the suprapubic rather than the vaginal incision. No one has touched on the cases of supplementary or secondary hysterectomy, which I thought was a very important matter. I have had to operate, removing the uterus where I had three years before removed the appendages. I think there is the cause of the poor results of the former operations; that the uterus has been the source of trouble, and nothing is easier than to remove such uterus by the vagina. It can be done in ten to fifteen minutes.

DR. VAN DE WARKER: I do not want to make any criticism of any of these brilliant papers. That of Dr. Henrotin was eloquently indorsed by Dr. Polk. By a strange coincidence, my own paper, which I trust I may have the pleasure of reading before the Society, touches upon the technique and method Dr. Henrotin brings out in his paper; and having had some experience in the same direction of vaginal incision through pelvic masses and gauze drainage, with excellent results, and in some of those cases—although I go very little into the subject of cases—some of those cases subsequent or secondary to laparotomy, or the removal of pus-tubes and ovaries, or for the breaking up of masses of adhesions, and the patient being in no sense made better, on the contrary, if anything, worse, and some of them being my own and some occurring in the practice of others, I can certainly offer my individual testimony strongly in favor of the method of secondary work: that we ought to remove an organ which is accounted superfluous and a source of trouble, not from itself, because I think the uterus is the most inoffensive organ in the female pelvis, but it has imbedded itself in a mass of adhesions, and possibly had better come out if we remove the tubes and ovaries, according to the method that Dr. Jacobs practices. Or, if we do not do that, we have a substitute in the method of drainage—incision into the pelvis and drainage in the method that Dr. Henrotin defined in his paper this morning. I can personally testify to the great value of that procedure.

Dr. JACOBS addressed the Society in French, stating that the progress of American Gynæcology had been greater than that in Europe, and his knowledge of this had repaid him amply for his visit. He wished also to say that the discussion was much more interesting in this country than in Europe, from the fact that America

was far ahead of Europe in the variety of work. They were slow about adopting measures there, and had only reached the point where they were still discussing the propriety of hysterectomy or intervention by way of the abdomen. He wished to say that, without regard to immediate results, after five or six years the woman who has no scar is better, both mentally and physically, than the woman who has been operated on—that the woman is better who has been operated on vaginally. The doctor expressed his heartiest thanks and kindest feelings for the cordial reception which had been given him.

Dr. HENROTIN (in closing) said : Concerning the value of hysterectomy in bilateral suppurative disease, as to the suppurative forms I do not wish to say anything, because I was, I think, the first who performed the operation, in 1891, and I read a long article before the Gynecological Society, which is in the *Journal of Obstetrics* of 1892, in which I explained the views I hold to-day. I remember the discussion we had in Chicago three years ago, when I said they would have to come to the vaginal method after a while. It was still a discussion, at that time, as to whether hysterectomy ought to be done. I think now it is pretty well accepted that it is a proper procedure in selected cases. No one pretends to propose general or miscellaneous work all over, either vaginal or abdominal, particularly in acute septic cases that are diffuse, reaching over years. The gentlemen say these cases are cured abdominally ; I do not know. I believe there are cases to-day in different hospitals ; I saw one in a hospital last week—a suppurative case. They are staying there. They are too sick. I ask you if, in the large pauper hospitals where the patients are congregated in large numbers, you are not much more apt to have bad results ? The French statistics come almost entirely from that class of cases out of the public hospital. Dr. Baldy brings us a schedule of cases by Dr. Kelly, by Dr. Baldy, by Dr. Baer, by Dr. Krug. I know that these gentlemen have selected places to operate, and their patients, to a great extent, are selected patients. They come in the midst of perfect surroundings. I would like to get them to try in their beautiful hospitals the vaginal operation, and you would see what they could do. They do not realize it themselves. As far as the operation is concerned, it is a hard operation to perform. The operation for extra-uterine pregnancy is utterly to be condemned vaginally, in my opinion. I believe that in nineteen cases out of twenty in extra-uterine pregnancy the other side is healthy, and I think the best way to do is to go up abdominally and see what you

can do, and take out the uterus abdominally if you believe it is proper to take it out at all. The idea is that in an extra-uterine pregnancy the blood will insinuate itself over to the other side and give you the impression that there is disease on the other side when there is not, and many a man has opened the abdomen and found he could clear out one side and leave the other side perfectly healthy. I believe that is the best ; that is my personal opinion. As regards operative work of a conservative kind, I have pulled out tubes through the abdomen and through the vagina, and I would rather pull them out through the abdomen ; but there is a rule that guides us, in my opinion, even then, and the rule is this : If you have a pus-tube on the one side and are able to diagnose that far, and it is apparently healthy on the other, the proper way, in my opinion, is vaginally, if you think it is a pus-tube. I had a woman sent to me. I thought both sides were diseased, because the swelling reached around. I was asked by the doctor to do a vaginal hysterectomy on this woman—she desired it. And he insisted on having the radical operation. I made a posterior incision, and worked up and got into a pelvic abscess. After draining the abscess I found the tube was bad ; I took out the tube and then I said to the doctor that I would not go on with it, because I felt that the other side was perfectly healthy. That was three years ago, and five months ago she sent me a photograph of a seven months' baby she has. It shows that you can do conservative work through the vagina as well as the other way. Dr. Baldy said that there was no case that can not be operated on abdominally if you can operate the other way, and the only case he has seen is one that was left abdominally, and was afterward operated on vaginally, and the woman died. There was a case, which Dr. Etheridge was kind enough to refer to me, who had had two laparotomies done on her, and still she was having a big sinus and a lot of pus, and I operated two months ago. These records show a large number of cases where laparotomy has failed to cure, and where they were cured by the vaginal method and by hysterectomy.

Dr. WATHEN (in closing) : I emphasized in my paper the way in which abscesses in the broad ligaments, abscesses from peritonitis, could be opened by the finger and thoroughly drained before the peritoneal cavity was opened. In regard to the statistics of these operations, I wish to say that the future will doubtless bring forth statistics in favor of vaginal hysterectomy that do not exist to-day. You will remember that the statistics of Dr. Jacobs show a mortality of nearly three per cent. Doubtless the later operations do not approximate

that much. You will remember that in the letter quoted from Richelieu his mortality has been over four per cent., but that in his last series of one hundred and twelve cases, including many complicated cases of pelvic suppuration, of removal of large ovarian tumors by morcellation, he had no mortality whatever. I believe that the future will result in a mortality in vaginal hysterectomy in properly selected cases decidedly lower than can be shown in the statistics of the most expert laparotomist of to-day. And it must further be remembered that most of these operations have been performed upon the most unfavorable cases, the most favorable, as expressed by Richelieu and by Peame, having been reserved for laparotomy. So that the worst cases give a mortality not higher than laparotomy.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

BY THADDEUS A. REAMY, M. D., CINCINNATI.

See page 752.

Abstract of a paper entitled

THE PROPHYLAXIS AND TREATMENT OF ECLAMPSIA.

BY EDWARD P. DAVIS, A. M., M. D.,

Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, etc.

Under the above caption Dr. Davis refers to his paper in the *American Journal of the Medical Sciences* for February, 1894, where he calls attention to the main features of the diagnosis and treatment of eclampsia.

In this paper he emphasizes his former statement that eclampsia is the result of toxæmia produced by failure of excretion not only of the kidneys but also of the liver, skin, lungs and intestines.

He illustrates this belief by reference to clinical data and gives the result of an autopsy on an eclamptic patient, which shows that she died of an irritant poison.

The clinical picture of several cases, non-fatal, shows a collection of symptoms apparently resulting from an irritant poison. Attention is drawn to the important relation between constipation and toxæmia.

In regard to the treatment of eclampsia he says: "In the presence of eclampsia two indications are paramount. The first is to cause prompt, thorough, copious elimination by every means possible. The hot pack, free purgation and saline transfusions are of the great-

est importance. To be avoided are sedatives, which hinder excretion and depress the cardiac and respiratory centers. In cases where apoplexy is threatened and a heavy, full pulse indicates bleeding such a procedure is justifiable." It is rarely the case that a profound toxæmia and eclampsia exist without bringing on labor, and the interests of both mother and fœtus are best served by rapid delivery, and it is a fact to be remembered that the same conditions which threaten the mother often kill the child. Post-mortem examination of the child and examination of its urine has shown that its life was destroyed by the same toxæmia which brought on the eclampsia in the mother.

On motion, discussion of these papers was postponed until tomorrow.

Adjourned.

DISCUSSION (on the Papers on Puerperal Eclampsia).

Dr. LUSK : I was interested in the treatment of eclampsia by means of veratrum. It was a favorite idea of Dr. Barker that it can be controlled by this method. The modern theory of cases of eclampsia is that it is due to a reflex spasm of the vessels that are distributed to the brain, and that the kidney affection and the anæmic condition of the brain are due in many cases to the same cause—that they are coincident, and not that, as once supposed, the convulsions necessarily follow the condition of the kidneys. Of course we all understand that the accumulation of excrementitious material in the blood gives to the case its gravity, but that the convulsions proper are of a reflex character and are due to a spasm of the vessels that go to the brain is the physiological explanation of the action of the drug in the cases which have been narrated by Dr. Reamy. My own experience has gone chiefly in the line of speedy evacuation of the uterus. That would belong more properly to the paper of Dr. Davis. I remember very early in my practice Dr. Barker telling me about a case that he had seen in consultation with a physician in New York, and he spoke in most complimentary terms about the manner in which the case was managed. It was about the seventh month, and he said the doctor had treated the case admirably—as he would have treated it himself. I asked about the patient, but she died. In all my early attempts to postpone, to treat the convulsion in the seventh or eighth month of pregnancy by drugs, my patients died, and I was led to do what seems to be the course at the present time—to empty the uterus as soon as possible ; and I saved a good many and am glad to see that

the measures are now becoming universally practiced. The idea, I believe, is that the accumulation of excrementitious material, which goes with the stoppage and suspension of the functions of the kidney, leads to a fatty degeneration of the muscular structures of the heart. When albuminuria in pregnancy advances to stages that threaten convulsions, it is time to empty the uterus. That is the thing which is most frequently followed by the disappearance of the dangerous symptoms. About ninety per cent., after speedy emptying of the uterus and removing the reflex causes, have a suspension of the convulsions. These convulsions in pregnancy have been noticed to come on frequently about the time the head settles down into the pelvic cavity. In bringing on labor it is very necessary to empty the uterus while the patient is under the influence of an anæsthetic. It is equally necessary that the anæsthesia should not be too prolonged. Many of our cases in which we emptied the uterus and prevented the patient from having any more eclamptic attacks were followed by sinking attacks, and the death is now believed to have been due to prolonged anæsthesia. So the speedy methods are now in vogue. They are now beginning to talk in Germany about artificial dilatation—really the old method. In all cases of multipara there has been success by making a deep incision and at once proceeding to empty the uterus, say in the course of half an hour or an hour. In the case of primiparæ, in which convulsions frequently occur, it is, on the contrary, thought best to use the dilator until the cervix is pretty well softened, and then, as we all know, they reach a stage in which further dilatation is extremely slow, and that time can be greatly shortened by making this deep incision—a measure which would have been rash five years ago. With modern antiseptic measures and care it seems to be possible to do it with entire safety, and that it will not add at all to the gravity of the case and does enable the physician to greatly shorten the period of delivery. The paper in regard to the retention of excrementitious materials in the system points out the reasons why we should be active in looking after these cases. I was reading recently that it is now said that creatin and creatinin have some special influence. It is known that urea in itself is harmless, and that creatin and creatinin stimulate certain layers of the brain, bringing on convulsions.

Dr. SMITH: I did not hear the paper read, but I hope the discussion will be, this time and every time, in favor of the early emptying of the uterus whenever we feel that there is the slightest danger of puerperal eclampsia. Whenever the urine is very much lessened in

quantity and loaded with albumin I think it is almost criminal for us to remain idle when we possess the means of putting that woman's life in safety. I have done this several times in the past years, at first with great opposition; but now, in our part of the country, it is being adopted. I also want to point out the importance of the fact that it should be done as much as possible under anæsthesia. The advantage of chloral is very great. We put the patient under the influence of chloral, to soften the cervix by rectal injections—chloral and bromide. I want also to point out the value of water in these cases. I have watched the secretion very carefully afterward in the cases in which I have induced premature labor, and the quantity of urine was very small indeed and loaded with urates. Now, I did two things—one to put my patient near a hot-water coil to keep her in high temperature, and at the same time to have a pail of water beside her. I say a "pail," because I give her as much as she can drink as soon as she is able to drink it, and if she is not I will give it to her by the rectum, because the kidneys are working under great disadvantage when you come to do the washing business of the system with water. It is the greatest diuretic we ever had. It beats all the drugs we ever tried. I give her lots of water to wash out the kidneys, and keep the skin pouring out water as well. I have had very satisfactory results by this plan. I hope the discussion will tend to give the impression abroad that the best thing to do is to empty the uterus as soon as we know that the urine is loaded with albumin in a pregnant woman.

Dr. ENGELMANN: An important point is close attention to the pregnant woman, especially in those cases where the kidney trouble is not marked. I have always in former years insisted on care in the pelvic measurements and other observations, but it is Dr. Davis' paper which teaches us to guard against these occurrences, against the possibilities of eclampsia, and in a great many cases it is a slowly developing condition which may not result in eclampsia, and yet it may where unfavorable conditions follow. But the observing of the urine where any general symptoms on the part of the patient point in that direction is especially important. Certainly, even if the urine is in very bad condition, and in the later months, you would not suggest the immediate emptying of the uterus. I have seen urine get so that it would coagulate completely, and yet the patients carried safely to their time by the general management and remedies suggested by Dr. Davis. As a rule, the attention necessary to the pregnant woman is not generally given. We come in at the last moment, where perhaps for months the mischief has been preparing. It seems to me that we

should emphasize the importance of the statements made by the doctor in his paper.

The PRESIDENT: I think the cardinal point in the causation of these cases is not a condition of the kidneys where the urine is loaded with albumin but is really a condition of renal insufficiency. The kidneys are not acting sufficiently to cast off the poisons which should be got rid of by that channel, and they gradually accumulate in the system until the patient is thoroughly poisoned. I think in a great many cases we find there is no albumin in the urine at all after the first convulsion—that is, in a number of cases where the urine has been examined the very day of the convulsion, and yet was perfectly free of albumin. But if you take a twenty-four-hour sample and find how much she is passing, you will find she is passing much below the normal amount; and the amount of solids, as shown by the specific gravity, is also below the normal amount. In other words, the kidneys are not doing their work, and if we will adopt the plan suggested—and I know of no better diuretic than water—if we will urge the patients to take water and take it in large quantities, we will stimulate the kidneys to action and carry off the poisons which otherwise will produce convulsion. I think this is an important point in prophylaxis; and if we watch the amount of urine and the specific gravity and see that the kidneys are doing their work, we will do more good than watching for albumin, and depending upon the presence or absence of that material as an indication for our treatment. In regard to *veratrum viride*, I have had considerable experience with that drug and value it as highly as Dr. Reamy does. I have never dared to give it in the same doses, but after the experience I had some time ago I shall never be afraid of it again. I was sent for by a practitioner whom I had seen in several cases. He had been pleased by the treatment and telephoned me to come down and see a case of convulsions. I was unable to leave at once, and before I started I got another telephone, saying I need not come, as the patient was dying and would be dead before I got there. He said she was perfectly pulseless, blue and cold, and that there was no use of my coming down. So I stayed in my office, and about the end of my office hours I got another telephone, to say that the patient was better, that she was still having convulsions, and that I had better come. I went down, and found a young woman with a strong, full, bounding pulse, no evidence of being anywhere near her end, and I asked the doctor what he had done. Well, he said he had been so much pleased with the *veratrum viride* treatment that he had given her a teaspoonful of

fluid extract, and that it apparently had not done any good for an hour or so after he had given it, for he thought the patient was dead. What he had done was to thoroughly poison the patient with it, so that he thought she was dead or dying, while she was suffering from the effects of the drug, and then her pulse came up again, and when I saw her she was in as good condition as ever. Although it is a drug which produces the most marked symptoms, and although patients may be poisoned to this extent, they will cast it off and recover from it; I shall never be afraid of the drug again after seeing the effect on that woman. I have used it hypodermically ever since Dr. King read his paper on the subject, and I am sure I have saved a number of lives by keeping the pulse down to sixty. I have found that if you keep it there they will probably not have convulsions. I think, however, that it is necessary to choose our cases and to give it if we have a patient with a full, bounding pulse and high arterial tension. But if we have a poor, weak, badly nourished patient, with a high, rapid pulse without arterial tension, I do not think the drug is going to do any good.

Dr. REAMY (in closing) said : It was no doubt observed by those of you who honored me by listening to my brief paper that I stated this was simply a clinical statement of the treatment of puerperal eclampsia, and I might as well have added to my paper "The treatment of puerperal eclampsia by veratrum." I did not want in this paper to go into the general question of the prophylaxis. That was stated on the first page. Dr. Davis' paper discussed that thoroughly. There could be no better contribution to that part of the subject than the one to which I referred in this paper, by Dr. Richardson, many years ago, on renal insufficiency associated with pregnancy. I fully and thoroughly subscribe to all the statements that have been made here in this discussion as to the necessity of watchfulness, and it has been my custom when engaged in obstetric practice always to attend the case two or three times a week the last few months of gestation, or at least once a week, and ascertain the quantity of urine and its constituents. That is the duty of every practitioner. The more we observe these cases during the attack, and the consequences of the attack, while there is not perfect agreement among the best authorities as to the immediate causes of the convulsions, in the majority of cases, still I think the consensus of opinion now is that it depends upon toxæmia, and that the approaches to the condition that develops the convulsions are approaches along that line of the retention of toxic elements in the system, as has been said, consequent upon the cell

action of the mother and the child, and that the only precaution that the pregnant woman has from the overwhelming conditions and consequences of such accumulation is the constant action of the kidneys and of the skin and of the intestinal canal; that in the free action, therefore, of these, every woman has security from those conditions which will not only endanger her life from other cause, but particularly render her liable to convulsions, and in a large number of cases will so result. I intimated this in the paper, although I did not pretend in the paper to discuss the cause. It was necessary to intimate it in order to harmonize what I said as to the treatment with the facts. Now, when we come to the attack it becomes to me a very serious question whether the position taken by our distinguished fellow from Canada (Dr. Smith) is the best. I should have great respect for the statement because it is his opinion, still I do not believe that his position on that question is tenable, and that it should be the rule under all circumstances to as speedily deliver the woman as possible when convulsions occur. First, although it is not the logical way to argue it, I may be permitted to call attention to the fact that in a large proportion of the few cases reported in this paper the convulsions did not occur until after the delivery. Of course that is a negative position. In a very large proportion of the cases reported in the journals of the country for the last thirty years the convulsions did not occur until after delivery. When the convulsions did occur after delivery, statistics show, other things being equal, that the disease is not so fatal ordinarily as when they occur prior to delivery. Now, that would imply, of course, that there is some element of danger in the continuance of the pregnancy, and would indicate the propriety of delivery. But it can not be claimed, I think, that the presence of the child *in utero* in these cases is an element of very great danger. I am unable to see, if the os is not dilated in a case of this character, where the convulsions come on before delivery, how there is any special amount of safety in it. I do not see how you can have an irritation consequent upon forcible dilatation and forceps delivery, it may be; and the very fact that in a large number of these cases it is the experience of physicians that after delivery the convulsions go on, and that in a considerable number the convulsions do not commence until after the delivery has occurred spontaneously, it seems to be conclusively settled that this is not the course of safety. I beg to call your attention to the fact that the object of my paper was to diffuse throughout the profession more thoroughly the idea that veratrum viride will, in a large number of these cases, arrest the convulsion by producing vaso-motor paralysis,

relieving the anæmia of the brain by its action in that way ; and second, after the convulsions are controlled, producing diuresis to a marked degree, a result of the remedy to which attention has not largely been called. Also you produce and provoke powerful action of the kidneys and lessen arterial tension, and at once produce the powerful depressing effect of this drug. You carry the blood to the heart and leave it there to be used after the woman is over the convulsion. It is in this that the strong advantages of the remedy lie. In the class of cases to which the distinguished president refers I would use morphine instead of veratrum. But in this class of cases where you have controlled the convulsion, the secondary effect of the same remedy that has controlled the convulsion is to promote the removal from the system of the toxic elements, which were the agents in the immediate induction of the convulsion. This, associated with the fact that in this same agent there is no danger whatever, it seems to me, makes it a wonderful acquisition to our resources in these cases.

Abstract of a paper entitled

DEEP INCISION OF THE PARTURIENT CERVIX FOR
RAPID DELIVERY.

BY J. CLIFTON EDGAR, M. D., NEW YORK.

He mentions the fact that the "treatment of puerperal eclampsia is a dream of the future, and regards the disease as a toxæmia." One of the first symptoms is failure of the kidneys and albuminuria. Eliminative treatment, including the evacuation of the uterus, gives the best chance to mother and child. Duhrssen has mentioned that where dilatation of the vaginal portion of the cervix fails, two to six deep incisions should be made in it in order to give the best chance to mother and child.

Duhrssen claims the most favorable results in arresting eclampsia by this method, claiming that 93.75 per cent. of attacks are arrested by it, while Charpentier, in an exhaustive article analyzing different modes of treatment, characterizes this one as brutal and unjustifiable. In the discussion of Charpentier's paper by Tarnier, Gueniot, Robin, and others, chloroform and chloral appeared to be the favorite drugs, and in no case was forced labor advised. On the other hand, the weight of modern opinion is in favor of early emptying of the uterus.

Two indications appear to be generally agreed upon :

1. Control of convulsions, preferably with chloroform.
2. Emptying the uterus under deep anæsthesia.

During pregnancy and the early part of labor four procedures are offered for rapidly emptying the uterus.

1. Cæsarean section.
2. Mechanical dilatation of the cervix.
3. Deep incisions, which at once completely remove the barrier of the cervix.
4. Combined mechanical dilatation and deep incision of the cervix.

The third and fourth methods are comparatively new, and there are few statistics on them.

I report three cases of delivery by the method of deep cervical incision.

CASE I.—Operated upon over a year ago ; patient and child saved. Suffers no more inconvenience from result of operation than from an ordinary ununited laceration of the cervix. Had eight convulsions before and none after operation.

CASE II.—Far gone when seen. Died sixteen hours after delivery; child saved. Nine convulsions before operation and two after.

CASE III.—Very bad condition on entering hospital. Woman and twins saved. Two convulsions before delivery and none after.

The following is a description of the operation in the third case :

Patient prepared as for vaginal hysterectomy. Chloroform anæsthesia. Dilatation of the os was begun by means of an Ellinger-Goodell dilator at 2 P. M. This was practiced for a few minutes, or until the os would admit two fingers. Manual dilatation was then kept up until 2.20 P. M. At this time the supravaginal portion of the cervix had been made to partially disappear, and although the edge of the internal os could still be distinctly felt, still, in view of the condition of the woman, four deep incisions of the cervix were made, antero-posterior and lateral, reaching as far as the utero-vaginal junction. Moderate hæmorrhage followed the cuts. A breach was then found presenting in the L. S. P. position at the inlet.

The anterior leg was brought down, and the first twin, a male, weighing five and a quarter pounds, was extracted at 2.24 P. M.

The second twin was then found presenting in the R. O. A. position. The right arm was introduced, the anterior leg seized, podalic version performed, and the second twin, a male, weighing five and a quarter pounds, was extracted at 2.28 P. M.

As there was considerable bleeding, the placenta was immediately expressed, and the utero-vaginal canal tamponed with iodoform gauze, partly to control the hæmorrhage, but more to secure good drainage through the incised cervix.

A uterine douche preceded the introduction of the gauze, which latter was removed in seventy-two hours. The after-treatment consisted of cupping, poulticing over the kidneys, cathartics, enemata, hot-air baths, and glonoin by hypodermic; milk diet for twenty-five days.

Small doses of potassium bitartrate were administered for the first two weeks, and during the whole time the patient was encouraged to drink large quantities of Bethesda water. Tincture of chloride of iron was commenced early and continued throughout. Anasarca rapidly decreased. An operation for repair of the perinæum was done on the nineteenth day with good result.

Examination eight weeks afterward shows good position of the uterus, freely movable, and cavity three inches deep.

Almost complete repair of anterior and posterior incisions has taken place, but only partial repair of the two lateral ones. The right lateral one has closed for about half of its extent and the left for one third. No eroded surfaces are to be seen. It can be seen that the left lateral incision had extended by tearing beyond the cervico-vaginal junction on to the lateral vaginal wall, as a cicatrix an inch in length can be seen. No stronger proof of the danger of making these incisions before complete disappearance of the vaginal and supravaginal cervix can be offered than this extension of the left lateral incision.

We were tempted to incise before the cervix was in proper condition for the operation, because of the desperate condition of the patient, and as a result one incision extended to the left lateral vaginal wall.

The same extension by tearing took place in Case II.

Skutsch, in 1887, recommended multiple cervical incisions, but gave it up on account of bad results.

Although Skutsch first recommended deep incision, Dührssen first performed the operation.

In multiparæ mechanical dilatation will usually suffice.

It is not necessary to immediately repair the incisions, as spontaneous healing usually occurs.

It has been shown that considerable hæmorrhage does not follow the operation. As a precautionary measure a tamponade was used in all my cases. The autopsy in one, and the study of the other two,

showed that the uterine contractions were sufficient to control hæmorrhage.

Primary septic infection can be avoided by surgical asepsis. Secondary sepsis may occur, but the danger of its occurrence may be lessened by irrigation of the uterine cavity and free drainage.

TRACHOMA OF THE GENITO-URINARY TRACT.

BY ARTHUR W. JOHNSTONE, M. D., CINCINNATI, OHIO.

See page 764.

THE ULTIMATE RESULTS OF TRACHELORRHAPHY.

BY WILLIS E. FORD, M. D., UTICA, N. Y.

See page 783.

DISCUSSION.

Dr. CLEVELAND: I do not care to take more than a moment's time, and wish merely to refer to one cause of possible failure to relieve reflex nervous disturbances, and it is this: that the operation, so-called, of trachelorrhaphy, as it is understood by a great many, means simply to repair the angles torn. I have seen a great many cases where the operation has been done where it was really necessary to do it over again, for the reason that cystic degeneration is extensive in the anterior and posterior lips, and after doing an amputation the patients were entirely relieved. For that reason I believe that in a great many cases this fact is overlooked: that the degeneration of the cervix is as much in the anterior and posterior lips as in the angles, and the operation is not complete unless amputation of the anterior and posterior lips is done.

Dr. ENGELMANN: That is precisely my experience, and, in addition, that in the old cases we generally find more or less endometritis. I never do that operation now without preceding it by curetting. In those cases which Dr. Ford describes, where the laceration was repaired in the early days, I have so frequently found the condition just described that, in place of Emmet's operation, I generally do what is called an amputation, which is a removal of more or less of the lip, preceding the operation by a curetting. It gives us an admirable os, and removes the diseased tissue. Dr. Ford has touched me on a

very tender spot: he says that in his experience he has seen no reflexes from these lacerations.

Dr. FORD: I did not say that; I said that mere transfers of pain or disorder of an organ could not be called "reflex disturbances."

Dr. ENGELMANN: No; but when it is distinctly marked, where the patient vomits—that is, when some of the raw surfaces are brought in contact by friction, or if with the sound or instrument you touch some part and will have vomiting, or backache, or pain in a certain part—I call that reflex, and I have seen those cases cured immediately after the operation. If it was done without an anæsthetic, that ceased as soon as the stitches were put in; and if an anæsthetic was used, after the patient was comfortable, a few hours after that. That may have been my peculiar experience, but as regards the general nervous conditions I have observed the same thing, that with the simple operation there may be no improvement; but if you will examine the condition—the enlarged uterus, the endometrium—and curette according to necessity, drain if you will, and remove sufficient of the tissue of the lips (and my preference is, in such cases, with a very much enlarged lip, the so-called amputation of Schröder—it may be as little or as much as you will)—my experience is that the cases result in a very different way from this simple fixing of the edges and uniting.

Dr. CURRIER: In our experience with this operation I think we have all observed two classes of cases—those in which there is not very much the matter with the cervix and those in which there is a good deal the matter. And it is very peculiar that in those cases in which most of us would say that there is very little that is abnormal in the uterus, the ultimate results of the operation are so surprising as they are sometimes. That proves, I think, what has been stated by Dr. Ford, and I believe by one or two gentlemen yesterday in the discussion of another subject, that the influence of this operations very largely upon the emotions, and an emotional individual having been subjected to an experience of this kind expects some considerable change, some considerable results, and gets it. Now, the question for us to decide is whether in cases like that surgical treatment is the proper thing to do. In the other class of cases, where there is a great deal of disorder in the tissue, whether it is disturbances at the angles, or general induration of the tissue, or what not, we certainly do get the decided results which we have the right to expect from the changes set up by an operation of that kind, and the results in such a case as that must be far-reaching; they must be not only local, but

they must in a great many instances extend to those conditions of which this is the cause. And that brings up the whole question of transferred or reflex condition, whichever you please to call it. We all know the nervous connection of the different parts of the system with each other; we all know the intimate connection of the uterus by its nervous system with almost every other important part of the body, and it seems to me that we are simply wasting time to quibble over the question of names in a matter of this character. It is very much the same condition which exists in some of the other parts of the body. We all know how much trouble in a remote place will sometimes cause sensations in various parts of the body. And so we are not to be surprised that a local lesion, a local irritation, such as this indurated matter is in the uterus, should sometimes set up the most extensive trouble, which, as we also know, is often very satisfactorily relieved by this operation.

Dr. DUDLEY: To my mind, the ultimate results of trachelorrhaphy depend upon your choice of cases and the manner in which you do your work. In my early years of professional life I used to operate upon every case of lacerated cervix that came within my reach. As I grew older, and acquired more experience, my operating upon such cases gradually diminished, for I came to believe that the major portion of the damage done by a laceration of the cervix at the time of delivery was produced within the first sixty days by such a laceration, and that, aside from laceration lapsing into a cystic degeneration of those lips, a mere laceration of the cervix had very little to do with the reflex symptoms from which many of these women complain. For this reason—that the injury done at the time had been overshadowed so much by causes brought up from that injury, such as arrest of the proper involution of the uterus, and, as a result of that, a constant, passive congestion and backing up, which produces reflex symptoms in the ovaries—the mere fact that the uterus was torn, and that by cutting out that tear and sewing up the cervix I should have relieved the woman, I felt to be a mistake. And for the further reason that in closing a lacerated cervix one has got to be very careful that they do not narrow the canal to an extent that will produce obstruction of the normal discharges from the uterus and thereby injure the patient rather than benefit her. Unless I can find a case in which the scar is tender, I seldom operate for laceration of the cervix. And still another reason is that when a laceration has existed sufficiently long to allow of cystic degeneration of the lips, if we close the laceration and include the cysts, many of which we can not reach, we

really lock up and cover in the conditions which, if allowed to remain near the surface, we could relieve. I now believe that in closing the laceration of the cervix under such conditions we materially injure the patient. For that reason I apply my treatment to the conditions existing above the laceration, and I am very sure that there are many men present here who will remember cases in which they wished they had not operated on the cervix, for at the time of doing the operation the uterus, tubes, and ovaries were apparently healthy, and as time has gone by the appendages to that uterus have become diseased. Why? Simply because in doing the operation on the cervix they have closed up the latter, prevented the normal drainage from the uterus, finally resulting in disease of the tubes and causing the sacrifice of the same. For these reasons I have almost abandoned the operation on lacerations of the cervix. I do not do an amputation of it because I believe that Nature intended that there should be a proper balance between the vaginal and abdominal portions of the organ, and if we sacrifice the one we endanger displacement; and if we have it, it takes a surgical procedure to relieve it. Without taking more of your time I would simply say that I believe I have been able to trace symptoms which Dr. Ford refers to as coming from local disease, but not as coming directly from the scar in the cervix, or the mere laceration.

Dr. GORDON : When Dr. Pryor read his paper last year before this Society, in which he took the ground that he scarcely believed the operation of trachelorrhaphy ever justifiable, I felt almost like agreeing with him, for it had been in the line of my teaching for several years in our school. Since then I have been impressing it very much more strongly upon the pupils, and I find myself, like Dr. Dudley, almost never doing the operation. I believe that if it is done at the time of the parturition it is justifiable. But it seems to me that in cases where we find it, as we do find it, after years, that we find troubles that are due not to the laceration, or rather can not be remedied by repairing the laceration, but due to conditions such as suggested by Dr. Dudley. I certainly have seen so many extremely bad conditions of the appendages following trachelorrhaphy that I dread now to attempt the operation at all. I believe that we can accomplish almost as much by the dilatation as we now do in curetting, and I think we need to take a great deal of care and do a very careful and long-continued dilatation. Dilate thoroughly, curette, dilate, wash out, dilate again, until we leave the canal in a perfect condition, tapping all the cysts, curetting with a sharp curette, so that when we

have got through we have broken up all these points about the laceration, and we have done something which sets up the process of involution, and have accomplished as much as we should by a trachelorrhaphy, and at the same time we have left a patchless canal, which allows drainage. I think I may safely say that I have not made two trachelorrhaphies in the last two years.

Dr. HARRISON : I would remind Dr. Gordon, who has just taken his seat, of a homely old German adage, and that is : "When emptying the bath it is not necessary to spill the baby." Trachelorrhaphy, I have maintained and I do maintain, is such a valuable contribution to our therapeutic procedures in the treatment of female diseases that if Dr. Emmet had done nothing else, that alone ought to hand his name down to immortality. (Applause.) And yet, gentlemen, I maintain that there is no operation that is performed on the female pelvic organs that has been more abused than that operation. I think that the ideas a great many have in regard to the subject of a tear do not rest on a scientific basis. The laceration of the cervix has been invoked to account for every obscure pain, for anæmia—for everything on earth that a woman can have. The consequence is that men who believe that can have a surgical operation whenever they want to. I do not believe, for example, that laceration in itself accounts for cervical catarrh ; it needs some special irritation to cause that. The researches of Rugenveit (?) show that in those cases we have a new formation there, and I do not think the laceration has anything to do with it. I have seen lacerations go up to the vaginal junction to the cervical canal and be absolutely free from all disease. And then Dr. Dudley has called attention to one very disastrous result of trachelorrhaphy, and that is stenosis. At this very time I have under treatment a lady who was operated on by a very excellent gynæcologist, and she suffers now with dysmenorrhœa from stenosis and accompanying endometritis. Simply repairing the edges of the tear in the diseased mucous membrane does not cure it. Not long since I was called in by a colleague in New York to help him in a case where he thought it would be necessary to open the cervical canal. The woman was in parturition, and in the first place she apparently did not have an os, and he thought it would be necessary to make deep incisions in the cervix in order to allow the child's head to come down. On examination, I found, away off around on a corner to one side, a little pit which I presume represented the os. The head had dilated the cervix above, and as the parts were softened down I managed to get my finger in and gradually dilate it. This woman

unfortunately had been subjected to two trachelorrhaphies, and they had sewed it up so completely that that was the condition. In another instance it was absolutely necessary for me to make incisions into the cervix so that the child could be born. Stenosis had been produced.

Dr. HOLMES: It requires a great deal of courage on my part to speak on this subject. I have been accustomed to operate on lacerations of the cervix of a much less degree than gynecologists have been in the habit of considering as being of any particular importance. I believe that even a slight laceration of the cervix, by the formation of tissue and the consequent friction upon the nerves, setting up a reflex irritation, does tend to interfere with the process of digestion and other processes that are involved in the nutrition of the body, so that slight lacerations, in the way I suggest, acting chronically, may interfere with the general health to a considerable extent. I have observed the practice and studied the philosophy of different observers, and believe I am acquainted with no other condition where there is so much difference by gynecologists of the day. I believe the reason of that is that so many of the symptoms that might be attributable in part to laceration of the cervix must be attributed to laceration of the cervix with the consequent accompanying endometritis and other results of injuries to the pelvic floor. So I am pleased to term this relationship a partnership of causes. I think that very many slight lacerations of the cervix are attended with endometritis which we benefit by a simple curetting; but endometritis and other injuries to the pelvic floor are so commonly associated that I believe we are only performing our duty in part when we address our remedies to only one of the conditions. If the trachelorrhaphy were a serious surgical procedure, then I should not practice it as I do—that is, repair the cervix after curettement and then repair the pelvic floor; but it is very simple indeed, and may be done in conjunction with the other procedures.

Dr. FORD (in closing) said: Regarding the operation itself, I have nothing to say except that in these cases it was successful, and I have thrown out all cases in which there was doubt and in which I have lost sight of the patient. Of course no one will operate where there is follicular degeneration or a large metritis without accompanying it with the necessary procedure of curettement, opening the cysts, and removal of the tissue. I only called attention to the fact that neurasthenic women are not improved by this operation in a larger proportion than they are improved by general treatment. I did not go

into the causes of general ill health. No one can believe in tracheorrhaphy more than I do, but I do not do it except the tear is very deep and is accompanied by other disease of the uterus. I do not believe in repairing little tears at all, and it is for this reason that I wish to bring the subject up now, that an excuse is found for the operation in the vague, indefinite, meaningless term "reflex neurosis," "reflex pain," "reflex disturbances," and there is no such thing, excepting in cases of sudden, spasmodic, transient conditions. Pain which is continuous is never reflex. All normal reflexes must be sudden—in the nature of spasms. The vomiting part I will accept.

Abstract of a paper entitled

A FEW CASES OF TRUE PELVIC CELLULITIS.

BY ELY VAN DE WARKER, M. D., SYRACUSE.

It is not many years since, under the stimulus of what was then called progress, that the term "pelvic cellulitis" was denied a place as a condition of disease. It was regarded as a phantom, the product of half knowledge, if not of ignorance.

After holding absolute sway as the leading factor in pathology of the female pelvis, according to the best authority of the time, it was deposed and actually driven out of respectable literature by the pelvic surgeon. By the fingers of the laparotomist it was demonstrated beyond all doubt that what had been frequently regarded as an inflammation of the cellular connective tissue was but an adhesion of near parts due to an inflammatory exudate, or a disease of the tubes and ovaries while the cellular structure remained intact. This condition was found so frequently that the existence of collections of pus in the pelvic connective tissue was regarded as rarely, if ever, seen, and that such collections of pus were in the Fallopian tubes, or in peritoneal spaces shut in by adhesive exudate, or designated by the collective and uncertain name of "pus sacs."

All scientific men must admit that this was a true advance, and that a vague and erroneous theory of pelvic inflammation was overthrown. It is positively a fact that the term "pelvic cellulitis" was used in a most unscientific and even ignorant way. By it was explained all forms of pelvic adhesions, exudates, and pelvic fixations and masses not evidently due to neoplasms. This was cleared up by the pelvic surgeon. It was the revolt of the man of facts against the

despotism of the man of theory. But to one who used facts as a mental searchlight after truth it was but the exchange of one form of despotism for another, more arrogant and aggressive than the first.

The pelvic, tubal, or ovarian extirpator was intolerant of the very term of cellular inflammation. Peritoneal and tubal disease simply took the place of cellular disease as the one and ever present agent of pelvic inflammation. Here the salpingotomist after all his triumphs rested, and became, like the theorist whom he displaced, an obstacle to advancement. Established error gave way before the logic of the facts that he had demonstrated. Had he stopped there the advance would have been born without a regret; but he did more. He obliterated the very idea of cellular inflammation as a cause of pelvic disease, and brought the term under such contempt that one who had regard for his reputation as a scientific man and a safe diagnostician among the body of the profession hesitated to admit its possibility.

After the performance of untold thousands of pelvic sections for the cure of pelvic inflammatory conditions, a vast number of which must have been useless and harmful, the more observing among this group of surgeons became aware of the fact that many of their patients were not cured, and were even made worse. Among them were numerous cases where enormous tubal accumulations clearly indicated the operation. Masses of adhesions reformed and uterine fixation recurred, or was not relieved.

After vaginal hysterectomy became well established and a comparatively simple operation, the mysterious obstacle in the way of success was supposed to be the uterus, and the more advanced surgeon proposed, in cases where tubal and ovarian disease demanded extirpation, to remove the uterus also as the really offending and now useless organ.

The facts of the pelvic surgeon had also lapsed into theory as narrow as the one that he had displaced, and equally at fault as an explanation of the total phenomena of pelvic inflammation. There are evident indications that the crude operation of tubal and ovarian extirpation as a general operation in pelvic inflammation is becoming obsolete, and that the future line of surgical relief will come from the direction of the hysterectomist.

The reaction began to revive the old idea of pelvic cellulitis. It was the old theory, but seen in a new light. It was a crystallization out of the mass of crude logic and obliquely observed facts of the old authors. But it is now a well-defined and scientific term. We know what it is as well as what it is not. Limited in this way, it is a posi-

tive advance in our knowledge of pelvic inflammation, and broadens the ætiological factors of pelvic disease.

These cases are selected out of many as having an illustrative value upon several points involved in this paper, and not in any sense as proof of the condition known as pelvic cellulitis, the existence of which, I take it for granted, no fair-minded and careful observer has the least doubt. One of the misfortunes of surgical specialism is to develop a tendency to mental restriction. One can not live, think, and act in a narrow purview for years without limiting one's mental perspective. It is a matter like this that appears to have entered into this question. The pelvic surgeon seems to have ignored the possibility of any wider area of pelvic inflammation than that which attacks the peritonæum, the tubes, or the ovaries.

This was the status of pelvic pathology through a period of splendid surgery, and of which I believe we are beginning to see the decline. Here and there a pelvic surgeon, as some of those who make a specialty of exploring the pelvis through an abdominal incision wish to be called, became awake to the fact that there was another pelvic morbid entity than peritoneal adhesions, sacculated tubes, cystic ovaries, and pus sacs, and that notwithstanding the thorough and aseptic removal of these conditions—and no one with any experience can doubt the propriety of the operation—the patient did not get well. The pain, the neuroses, the pelvic fixations, and the disability continued in full force. Several surgeons who candidly admitted these negative results in published articles, and recommended uterine extirpation, which I do not hesitate to admit was a proper conclusion, reached it, in my opinion, upon false premises. They accused the most inoffensive organ in the female pelvis, unless it be the seat of malignancy or of neoplasms—namely, the uterus—of being the offender. It is true that it had become a superfluous organ, and also true that some prompt recoveries followed its extirpation after tubal and ovarian operations. I believe that the failure to cure after the primary operation was due to an associated pelvic cellular inflammation, and not to the fact that the uterus was left intact.

In my public and private practice I have had abundant material, and have operated liberally and have been often disappointed. Some of the conditions found were very misleading. Enormously distended tubes, ovaries incarcerated in masses of exudate and adhesion, omental, intestinal, and uterine adhesions, appeared to account for all the condition of the patient, though removal of the offending conditions and prompt recovery from the operation failed to relieve the

patient. My experience in Case III was repeated several times, and always with good results. But this method was tedious, lacked precision, exposed the patient to the danger of secondary infection, and was too limited in its action.

I have always been found in the ranks of the conservative pelvic surgeons, but I became convinced that we did not go far enough and that the uterus ought to be removed. Not because it was diseased, but by the removal of the organ we opened up the cellular pelvic spaces and secured the necessary drainage to relieve the cellulitis. Hysterectomy in my opinion affords the only route to this area of intrapelvic inflammation.

I am also convinced that it is hysterectomy of a certain kind. Preferably it is through the vagina; it is not the operation by ligation, but by the forceps or clamp. It makes a wide difference whether all the spaces are occluded and surfaces are brought into contact by sutures and inclusive ligatures, or are left open to free drainage by the removal of the forceps, which secures this result by the retracting tissues. The French method is now developing along this line, and, if we are correctly informed, with brilliant results.

If I am asked, Ought this method to be practiced in all cases? I emphatically answer No. We may have pelvic peritonitis with its resulting evils without associated pelvic cellulitis. We may have many forms of tubal disease imperatively demanding operation unattended with inflammation of the pelvic cellular spaces, and we may have the latter without the former.

What I am contending for is a scientific recognition of the various forms of inflammation, and I believe that we may reach a reasonable differential diagnosis—not in all cases, for I have a profound respect for the difficulties of pelvic diagnosis by palpation. But in a very considerable number we may come to a safe conclusion. I have a simple diagnostic sign, and when I find it I feel very sure of the presence of cellular inflammation. In this tissue, pelvic or elsewhere, inflammation may extend by continuity into any part made up of like histological elements. We have inflammation in the broad ligament extending into the iliac fossa laterally and downward through connective-tissue spaces into the vaginal septum and through the pubo-sacral areolar process to the lateral surfaces of the vagina (Savage). In these locations the infiltrated cellular spaces can be brought up between the finger in the rectum and the thumb in the vagina as thickened, indurated, and doughy masses. This condition may extend downward an inch or more. It may extend to the lateral surfaces of

the vagina, disappearing to the touch above the limits of the passage, and shows on palpation as a slightly elastic mass firmly fixed to the pelvic wall, smooth and glistening, the vaginal rugæ obliterated. I have observed that these lateral extensions reach downward farther than those situated in the recto-vaginal wall, reaching in some instances nearly to the vestibule. This condition is a true cellulitis, and indicates and is concurrent with cellulitis higher up in the pelvic space, but is not associated with pelvic peritonitis, or salpingitis, or oöphoritis.

While this vaginal cellulitis has been described, I have not seen it referred to as an index of the character of the primary pelvic inflammation. Unless existing in a very marked degree, it can not positively be detected by vaginal examination alone, but by combined vaginal and rectal palpation. We must remember, however, that there is no reason why pelvic peritonitis and cellulitis may not coexist. Having this possibility in view, the symptom I have just described could prove the intercurrency of cellular inflammation.

When this is well established I believe that thorough surgical treatment requires hysterectomy as well as the older operation of removal of tubes and ovaries.

DISCUSSION.

Dr. SMITH : I agree with what Dr. Van de Warker has said—that the pendulum has swung too far in the direction of intraperitoneal pelvic disease ; and although I think the cases in which the disease is outside of the peritonæum are much more rare than where it is inside, I think we do have cases of genuine pelvic cellulitis. But we meet much more frequently with cases of abscesses of the tubes and ovaries without very much disease of the broad ligaments. One case which occurred to me was one in which a pus-tube existed for some time ; I was called to see that patient, and was arranging for an operation when the tube burst into the broad ligament. I was called out of town and another doctor got the case. Six months afterward that patient came to me, and the pus had burst through into the vagina. I removed an enormous pus-tube, which took me as long as I ever took for any operation, and necessitated my tying off the whole broad ligament. The patient recovered ; but there was a case of genuine inflammation of the cellular tissue, succeeding rupture of the pus-tube into it. The whole cellular tissue was one mass of pus. Another case was one in which the cervix was lacerated and the patient was infected during confinement and the cellular tissue adjoining became

infected, and there was a large collection of pus. There I inserted a piece of drainage-tube which I would recommend very highly—a piece of rubber tube with a cross piece in it. It is a splendid drain. I kept it in for about a week or ten days and she made an excellent recovery. Although I think Dr. Van de Warker is right in calling attention to the frequent presence of genuine cellulitis, I think the majority of cases are inside the peritonæum.

Dr. WILLIAMS : There can be no doubt in the mind of any one who has seen a considerable number of autopsies on women that cases of pelvic cellulitis do occur. I have seen a small number, but several distinctly marked cases in which you could make a definite diagnosis of septic cellulitis, where there was no involvement of tubes and ovaries. I have seen two cases in the cadaver where there was absolutely no doubt as to the occurrence of pelvic cellulitis, both being women who had died after childbirth with symptoms of sepsis. But, for my part, I must say that the vast majority of these cases of pelvic suppuration are undoubtedly of tubal or ovarian origin.

The PRESIDENT : I think the point Dr. Van de Warker made was this : that pelvic cellulitis exists as a complication frequently of tubal and ovarian disease, and that when it does exist the abdominal operation or any operation for the removal of the tubes and ovaries is not sufficient, but that the pelvic cellular spaces should be opened up by removal of the uterus by hysterectomy, and a cure will be much more likely to occur. Also that a diagnosis can be made by palpation when these exist coincidently with the other troubles.

Dr. VAN DE WARKER : The president correctly states the contention in the paper.

Dr. DUDLEY : I only want to call attention to the fact that this condition occurs more frequently than it is reported. If any one cares to take the trouble they will find reported in Gaillard's *Medical Journal* a case operated on by me in 1883, in San Francisco, where I removed a ten-pound ovarian tumor complicated by a pelvic abscess entirely distinct and separate from it, with a normal peritonæum between the two. I made a funnel between the tube and the pedicle of the ovarian tumor through which to drain the pelvic abscess through an abdominal incision. It was a most difficult case of tubal ovarian disease, entirely independent of the pelvic disease, no inflammation existing between the two, and all developing within three weeks' time from an accident.

Dr. ETHERIDGE : I think it can best be put in this way : that perimetritis very often exists without cellulitis ; but very much more often

do we find the coexistence of cellulitis and peritonitis, with the latter preceding it—that is to say, the cellulitis is accompanied by a peritonitis. I think the point of digital examination has been well taken—namely, that in examining the mass through the vagina there is a smooth, unbroken surface from the lower to the upper part, whereas where the trouble is peritonitis within the pelvic cavity we will find there is always a cellulitis between the wall of the cavity and the peritoneal inflammation. In cases demanding vaginal hysterectomy we will find that the accompanying cellulitis is better drained by the vaginal operation than by the abdominal operation. Therefore we find in many cases of vaginal hysterectomy, or inflamed conditions of the appendages or uterus, that the cure will be much more rapid than it will be after the abdominal operation.

Dr. WYLIE: I suppose one can hardly say what he would like to say in so short a time, but I was one of the very men who took up and advocated the idea that what we were taught to believe and know as chronic cellulitis was really a local peritonitis. I do not believe I have ever stated that I could assert that this was more frequent than nine out of ten in the cases that we classed as cellulitis at that time. I also stated that there were many cases of acute disease in which the pus would be found in the connective tissue, and which could be probably called cellulitis; and when chronic it was nearly always found, if the peritonitis did not start the cellulitis, that the tubes and ovaries were complicated. I believe that the position is practically the same to-day. Like everything else that human nature takes hold of, in the beginning mistakes were made, but I do not think that the cloak of conservatism that so many men are fond of throwing around themselves is exactly fair. Without youth and enthusiasm a great deal of progress would be lost, and I do not think it should be suppressed, but simply guided. I almost entirely agree with the author's conclusions; but he is looking backward. I believe the men who deserve some credit are the men who took the radical views and had the courage to carry them out in the teeth of opposition, that many men did not have. It is easy now, when the thing is practically settled, to make these statements, but even the first statements were not far wrong. If you go to Bellevue Hospital, where the cases come in, you may examine fully a hundred cases without finding a single one that you could class as one of cellulitis where the pus was in the cellular tissue. I believe that most of these cases that are so frequently found are merely acute cases that will probably be cases of metritis, and that there are still to be found the diseased tubes and

ovaries as at the beginning. As to the operation, it is easy enough now to refer to it; but until such men took hold with enthusiasm of chronic cellulitis and salpingitis, and worked out a method of abdominal surgery, there had hardly been any start; and even the general surgeons must acknowledge that their first practical lesson in abdominal surgery was preceded by the work of the gynecologists in the teeth of the strongest opposition that could be got up by the profession.

Dr. VAN DE WARKER (in closing) said: It gives me great pleasure, in closing this debate, to express my thanks to Dr. Wylie for his brilliant contributions to pelvic surgery, and for his accurate and clear demonstration of what I admit to be absolutely true—the great prevalence of pelvic peritonitis from pelvic cellulitis. I think he is one of the brightest stars in the firmament of brilliant surgeons who have adorned American surgery in this particular field. As for myself, I have been an humble follower. But what I meant to do in my paper I think I have accomplished here now; not but what it existed before, not but what this undercurrent of truth was running all through this matter, but what I meant to get was a public expression of the concurrence of pelvic cellulitis with peritonitis, and that they may exist separately or coexist. As to the diagnostic sign, in one case I spoke of a ridge behind the cervix. Lying between the rectal vaginal junction was a little mass that could be picked up by the finger, connected with the exudate which was extending down through the iliac-fossa and through the broad ligaments, and the extension of the pelvic sepsis downward into the recto-vaginal septum. Pelvic cellulitis which becomes infiltrated can be caught up in that way. (Sketches on the blackboard.) Then, laterally, here is the right and left side of the vagina. Here is the pelvic cellular inflammation extending downward from the same region, which may be picked up between the finger and the vagina and the pelvic wall, and that can be also demonstrated with the finger in the rectum and the thumb in the vagina, feeling that as an exudate protruding from the vagina into the pelvic wall. Posteriorly in the recto-vaginal septum it is more often existing as a ridge which can be picked up. And when the extensions downward into the vaginal septum or vaginal lateral wall are found, I claim it is an extension of a cellular inflammation existing high up and is a clear demonstration of the character of the infiltrate.

Abstract of a paper entitled

PREVENTION OF UTERINE DISEASE DUE TO CHILD-BEARING.

BY W. GILL WYLIE, M. D., NEW YORK.

Under the above title Dr. Wylie calls attention to the great development of surgical gynecology and the great interest manifested in it by the general as well as the special practitioner, and emphasizes the importance of and necessity for more attention to measures directed to the prevention of conditions which give rise to most of those operations.

In enumeration of some of the measures of prophylaxis he suggests careful attention to the general health of girls between the ages of ten and seventeen years, when the generative organs are undergoing rapid development. The generative organs are the last to develop, and are not necessary to life ; hence they are first to suffer from close and excessive work, deficient food, want of proper exercise and fresh air, and emotional or mental excesses.

Some of the results of imperfect development of the generative organs are the small, flexed uterus with catarrhal erosions and endometritis, causing leucorrhœa, dysmenorrhœa, and, later, in sterility or lacerations of the cervix, subinvolutions, displacements, etc. With regard to the married state, much may be done by careful attention to the hygiene and diet toward bringing the woman to the end of her term in good condition. In women whose pelves are small, or where the child's head is excessively large, where the cervix is imperfectly developed or chronically diseased, or where conception occurs when the woman is past thirty years, much may be done to prevent injury to the mother, and without danger to the child, by inducing labor prematurely. It is well to examine the pregnant woman, as a rule, during the eighth month in order that bad position of the child should be corrected.

Induction of labor may be accomplished by an expert who understands cleanliness and the use of antiseptics with no more danger to either child or mother than labor at full term.

Dr. Wylie brings on labor, after having made the genital tract thoroughly aseptic and dilating the vagina for a few hours by means of a rubber bag, by carefully passing a rubber catheter fitted with a stylet into the uterus along the anterior wall, without rupturing the mem-

branes, and then withdrawing the stylet. If this be done at night, labor will probably come on in the morning. Rules are given for preventing sepsis and for the after-treatment of labor or abortion, and immediate repair of injuries is advised.

He says that the general impression is that retained placenta is the cause of post-partum sepsis, but that this teaching is erroneous. The retained placenta must first be infected, then it retards the normal tissue from resisting the infection and forms a nidus. Retained placenta should be removed, but there are fatal cases of sepsis where there is no retained placenta.

Gauze loosely packed in an ordinary cavity, where the secretions are thin and watery, drains well. In the uterus the conditions are different. The secretions are thick, and the gauze once saturated with them, drainage takes place in spite of the gauze and not on account of it.

Soon after the initial chill and rise of temperature of puerperal sepsis, if the uterus be emptied and all material favorable to development of germs carefully curetted away, washed with a good antiseptic, and loosely packed with gauze, in most cases a cure will be effected. Where the sepsis has existed several days the above-described measures are much less apt to have a beneficial effect, for when the sepsis has once entered the peritonæum, veins, or lymphatics, local treatment can not alone effect a cure, but in most cases it is difficult or impossible to know whether sepsis has extended beyond the uterus unless it be first emptied and washed out. The washing out of the uterus should be repeated five or six times before it can be determined that the cause of sepsis is not local; a 1-to-60 or 1-to-100 solution of Calvert's No. 1 carbolic acid is the best for washing out the uterus. If a number of injections are used, the urine should be watched for carbolic-acid poisoning.

In some women an enlarged or subinvolted uterus may excite or cause melancholia which will be relieved by restoring the uterus to its normal condition. On the tenth day after pregnancy, if the uterus is large and crowded down in the pelvis, the patient should be placed in Sims' position, the uterus pushed well up, and the vagina packed with large boroglyceride tampon, this repeated every two or three days until the uterus reaches the proper size, which is usually six weeks.

DISCUSSION.

Dr. DUDLEY: The subject of the paper opens up a field for discussion which includes the major portion of gynæcology, therefore I

can only refer to a few points relative to disease due to childbearing. I feel that it is my duty to differ with the reader of the paper in one point that he makes—that of producing premature labor—and I believe he spoke of it in a general way, for the reason that he, as well as the rest of us as specialists, are not only talking to specialists here, but talking to the world, and what is said here has great weight outside of this Society. For that reason I believe we are putting a dangerous instrument into the hands of men who do much more obstetrical work than we do ourselves, who do not understand antiseptic surgery, and who are not as well prepared. For that reason, with all due respect to my colleague, I must beg to differ with him in respect to that portion of his paper. A considerable proportion of the uterine disease is due to mismanagement at time of labor or to childbearing, and my belief is that the cardinal point to be watched, and major remedy for the prevention of disease, will be the repairing of all injury at the time of labor; not to wait until sepsis has penetrated through an injury. For that reason, since the meeting of this Society in Boston, in which Dr. Boldt read a paper on trachelorrhaphy, I have endeavored to improve on that by repairing all uterine as well as vaginal injury immediately after labor. In New York this winter I reported twenty-one such cases with good results. I believe that if all of you gentlemen will refer back to your cases of puerperal fever that has followed labor, you will find in a major portion that injury has taken place at the time of labor, and your patient gets up with a lacerated cervix, for which you are obliged to treat the very symptoms that have been called up by the discussion of other papers this morning. That, sir, I believe to be a prime factor in the cause of disease—neglect of injury done at the time of labor. Dr. Wylie has very appropriately and at the proper time delivered a blow to the idea that retained placenta will always become septic. I think that is the least of the dangers, because I have coming into my clinic at the Post-Graduate Hospital case after case of retained placenta. I curette the placenta out in the clinic, before the class, and send her away, to come back in two or three days with all the symptoms relieved. Therefore I say that I am not prepared to concede that there is a better way than the careful cleansing of the uterus at the time of delivery, repairing all injury to it, and in doing that you are obliged to cleanse the uterus above; and I invariably wash it out with a weak solution of bichloride of mercury and thereby clean the cavity. I never fear puerperal fever from any retained placenta in the uterus after repairing the cervix. I do the work with catgut. The work is done, and the woman goes out well,

without the dangers which have called for the reading of this paper. One other point: Even in cases of abortion such work can be done, and done safely, and I practice it there. My last case, which is sufficient to prove to you that the procedure is a good one, came into the Harlem Hospital last week suffering from acute Bright's disease until she was dropsical; she had tubal pneumonia, hypostatic congestion; she was spitting up blood by the mouthful; she was in convulsions. I delivered her of the child by instruments as soon as I possibly could, and found a second in the uterus, which I delivered as quickly as possible. She had already been three days in labor, and on delivering her I ruptured the cervix and the vaginal junction on both sides, washed out the uterus with bichloride solution, and placed the patient in bed. She was thoroughly poisoned by urea and was nearly dead from hypostatic congestion of the lungs. She recovered.

Dr. REAMY: To what extent must the cervix be lacerated in these cases to justify immediate operation on the cervix?

Dr. DUDLEY: I am accustomed to deliver my patients on the side. After every delivery of a woman I introduce a fair-sized Sims speculum and inspect the cervix. If I find the uterus injured in the entire length I put sutures into it. I have put as many as four rows of sutures around the cervix under such circumstances, and have had the pleasure of examining those patients time and again after delivery and found the os as normal as if she never had borne children. So I believe at the present time that we have gone far enough; we have listened to brilliant results during the last two or three days, but little has been said on the conservative line. Dr. Jacobs reported four hundred and three cases of hysterectomy. He left three hundred and ninety-one women neither women nor men. My belief is that some of them could have been saved. I believe that in the next ten years the work will be along that line of saving the woman everything we can. The duty of a physician is to cure and save, not to mutilate and take away, and I believe the time will come when we will be able to switch an ovary around from one side and attach it to the tube in the other and get good results.

Dr. WILSON: I want to say that I have never used a curette in my life. If after a case of labor I see any unpleasant symptoms arising in the woman which leads me to expect that she may have septic trouble, I at once, after disinfecting my hand, pass it into the vagina, and my finger into the uterus, and I use my finger to explore the uterus to tell me what the condition is—whether there is any placenta

left—and, if necessary, I thoroughly curette the uterus with my finger nail. I have felt that by that means I could curette intelligently, which you can not do with the ordinary curette, and that I can determine more accurately whether there is any trouble from any retained pieces of placenta, or open sinuses, etc. Another point is that I have never packed the uterus with anything after curetting. I believe it is better practice to keep the canal perfectly open and have nothing to obstruct the discharges from the uterus than by putting any tampon gauze into the uterus. Wash out three or four times a day with warm water, and this is better than to obstruct the canal. I believe that, so far as medical treatment in such cases is concerned, it amounts to nothing. Good nourishment and thorough washing out four or five times a day is the best treatment.

Dr. LUSK: I do not rise to make any criticism, but there is one thing which it does seem to me it is very desirable that the profession should have impressed upon their minds, and that is that in all cases of puerperal fever we have there the uterine cavity, and the infection takes place oftentimes from below; but the injuries from below are for the most part followed by attacks of cellulitis. But the injuries can start from the uterine cavity, and the infection consists of cocci, which get into the mucous membrane, and there pours a stream of white corpuscles which form a barrier around the entire mucous membrane. If you let that case alone, if you will not curette and will let Nature do her own work, you will not have nine cases out of thirteen recover—you will have thirteen cases recover. You put in a curette and dig away—as a gentleman stated in a paper, that always where he has a rising temperature he takes a curette and scrapes away mucous membrane. He loses cases that ought to get well. You break down a barrier that Nature has formed, and you open channels into which the cocci penetrate, and on into the tissues of the uterus, and when once they have gone beyond the mucous membrane they are altogether beyond your reach. In most of the cases we have temperature running from 103° —the high temperature only lasts for two or three days, with a higher temperature in the evening. Now, those patients have a pulse of 120, only for a few hours exceeding 120, and all of them get well when they are left alone. A portion of them get well if they are curetted and tamponed and douched every three hours.

Dr. WILLIAMS: I am delighted to hear Dr. Lusk make the statements he has made. I have made similar ones in Baltimore and have been severely criticised for it. I can indorse thoroughly what Dr. Lusk says from a bacteriological standpoint. I have devoted some

attention to studying the bacteriology of puerperal sepsis, and what he says not only coincides with the work of others on the subject, but coincides with my own. I should say that in dealing with puerperal sepsis we have two classes of cases : one of streptococcus infection, and in those cases we have absolutely no increase in the temperature ; we have a perfectly smooth surface ; our streptococci, if virulent, have probably invaded the entire thickness of the uterine wall before or as soon as we get a rise of temperature at all. In this case it is folly to curette the woman, and it is also folly to try intra-uterine douches of any character. On the other hand, we have a class of cases in which they are generally inflamed, with putrefaction organisms. Now, in that class of cases, if the temperature goes on for some time, I think we are justified in curetting the uterus. We curette to get rid of the dead tissues there. I should just curette very lightly, so as to remove what is readily removable, and if we come to give a douche we give it with sterilized water, because where we have the virulent streptococci it will go on. On the other hand, where we have the putrefaction organisms, all we need is to remove the material on the surface on which the organism is acting. All we need is to remove them mechanically, and if we use the water we get results as good as with bichloride of potash, and we do not run the risk of death from bichloride poison.

Dr. LUSK : It has been suggested that there may be some misunderstanding of what I said. I spoke entirely with regard to pure sepsis. The fever that results from putrefactive processes in the uterus undoubtedly is benefited by the removal of the putrefied matter, but I would prefer to pass my finger into the uterus to remove any placenta that might be left, and that is much safer than the curette. But I would stop at that point.

Dr. J. W. COBLE (of Dallas, Texas) : I did not come here to teach, but to learn something. But on this subject of curetting I have had a little experience, and I must say this : In the last case which I curetted and washed out with carbolic acid I got toxæmia, and after giving the injections invariably the lady would have a chill. After that I ceased giving her the carbolic-acid injection. I had no more chills, but I washed the uterus with bichloride of potash ; and from that time to this, where I have had curetting to do, I have taken borated cotton and wound it on to something and swabbed around the inside of the uterus. You can get pieces of membrane out of there that water will not bring out.

Dr. WYLIE (in closing) said : If I had read my paper more fully

I would have hardly anything to say, but I would like to make one or two points clearer. The reason I said I would not propose the induction of premature labor if we had to go back ten or fifteen years in our knowledge of obstetrics and antiseptics is that I believe this will have very little influence on the older men, and those younger men who can not use cleanliness to prevent trouble in those cases had better go back to college or quit medicine. Certainly the young men to-day do understand a great deal more about it than they did, and I claim it would be much better than to watch a case for several months with a small pelvis and wait until labor and then do a brilliant operation. As to this method of cleaning out the uterus, it always provokes a great deal of discussion. It shows the profession have not yet decided what is the best method. The reason I have spoken so positively is that I had tried a good many methods until I tried the simple one of washing every hour. When I said I had lost two out of nine it was because the trouble almost certainly had extended beyond the uterus; but in every acute case where I reach the case in twelve to forty-eight hours after the first chill I can almost guarantee success by this simple method. I admit there may be a great deal in the scientific investigations, but they have not been long made. The number of cases of sepsis is very small, so that a man of large experience may see but a few in a year. It has not been clinically demonstrated just how to diagnose which is the dangerous one and which is the innocent form of trouble attended with chills and fever. The reason I am so positive is that I believe that if we get at it early enough we can prevent it, and I say this from actual experience. I claim that the washing which has been recommended by many—washing once in two or three hours—is absolutely useless. If it gets beyond three hours it is worse than useless. I admit there may be something in this new idea which has been developed in the laboratory, but I claim it is not proved yet. My cases have been for many years consultation cases where something has to be done, and even in those cases if I start and give a douche I expect to see the temperature run up to 104° or 105° and a violent chill take place, but I understand that that is a necessity. That is why I wash at once thoroughly. I use carbolic, and follow it up every hour to kill the germs as they develop. If you do it promptly and properly you will cure, almost without exception, every case of sepsis. I have done it for fifteen years almost without exception. In cases in New York recently that have been pronounced absolutely hopeless I have taken hold of them, and, by simply washing every hour, I have cured the case.

Abstract of a paper entitled

DECIDUOMA MALIGNUM.

BY F. WHITRIDGE WILLIAMS, M. D., BALTIMORE.

At a meeting of the Leipzig Obstetrical Society, July 16, 1888, Sänger reported what he termed "two unusual cases of abortion," one of which occurred in a twenty-three-year-old woman, who aborted in the eighth week and died seven months later, with four large, soft, spongy, reddish tumor masses in the uterine wall, and metastases of the same character in the lungs, diaphragm, tenth rib, and right iliac fossa.

He stated that the microscopic examination showed that he had to deal with a tumor composed of cells similar to those found in the decidua, and that he had before him a "malignant metastasing deciduoma," a tumor never before observed, and which belonged in the sarcoma group.

He reported the case more in detail before the German Gynæcological Society in 1892, when several of the members stated that they had seen similar cases. And in 1893 he made it the basis for an extensive monograph, in which he collected all that was known concerning this class of tumors.

The year following his first publication, Pfeifer, a pupil of Chiari, described a similar case, and, without knowledge of Sänger's previous work, likewise proposed to call it a malignant deciduoma. He stated at the same time that Chiari considered that three cases which he had previously reported as carcinoma of the uterus following the puerperium were of the same character.

Numerous more or less similar cases have been reported since Sänger first called attention to this class of tumors, which have increased very rapidly in number since the appearance of his monograph.

The vast majority of the cases have been reported by German observers and a few by French, but as yet no one has reported a case occurring in this country or England.

The case which we are about to report, occurred in Baltimore last summer. My friend, Professor William T. Howard, Jr., of Cleveland, performed the autopsy and very kindly placed the specimens at my disposal. I exhibited them before the Johns Hopkins Hospital Medical Society last November, and a brief description with an ab-

stract of the clinical history appeared in the *Johns Hopkins Hospital Bulletin* in December, 1894 :

Clinical History.—R. W., aged three years, was a full-blooded negress, both her parents having been born in Africa. The family history was good, both parents being still alive. She had five normal labors, the third being a miscarriage at the sixth month, in all of which she was attended by a midwife. Her last pregnancy was perfectly normal, except for a transient attack of slight albuminuria a few days before confinement.

On the 15th of April, 1894, she was delivered at term of a dead child after a normal labor. The labor was slow and lasted about thirty hours, a good deal of blood being lost in the third stage. The placenta was "soft and boggy," but there was no loss of blood after its expulsion. The puerperium was not entirely normal, the temperature remaining at about 100° F., accompanied with great prostration. Her physician saw her for eight days, and then discontinued his visits, leaving her with a chalybeate tonic.

About a week later the patient's mother informed him that there was a small and painful nodule about the size of a pea on the right labium majus, for which he prescribed some soothing wash without seeing the patient. Three weeks after the labor he was called once more to the case and found the right labium swollen to about the size of a hen's egg and very painful. In it was a bright-red tumor the size of a walnut, which rapidly increased in size and soon became gangrenous and ulcerated on its surface; so that one month after labor it had attained the size of a hen's egg, was markedly necrotic on its surface, and was accompanied by a very odorous discharge. There were no symptoms indicating any involvement of the uterus, and, as the patient was rapidly growing worse, he advised her to enter the Maryland General Hospital, which she did on May 16th, and died July 12, 1894, less than three months after her confinement.

When she entered the hospital she was suffering with septicæmia. Examination showed a large sloughing mass occupying nearly the whole of the right labium and the adjacent tissues, in the center of which there was a fistulous tract which opened into the rectum, through which fæces were discharged.

The temperature varied from 99° in the morning to 103° in the afternoon, but during the last three weeks of life it did not rise above 100° F. Death from exhaustion with marked emaciation.

The clinical diagnosis was sloughing hæmatoma of the vulva with septicæmia.

The autopsy, which was performed six hours after death, showed a large raised, irregularly shaped, ulcerated mass, which involved both labia and the posterior part of the vulva and extended a very considerable distance up the posterior vaginal wall, and at one point communicated with the rectum through a large fistulous opening. The mass presented a grayish-red, mottled appearance, was very brittle, and in its deeper parts closely resembled placental tissue. On the left wall of the vagina, between this mass and the cervix, there was also a smaller ulcerated area, which resembled the mass at the vulval entrance.

The uterus was enlarged to about twice its usual size, and from its posterior wall a tumor, measuring 3.5, 2 by 1.5 cm., projected into the uterine cavity, while a smaller one, 1.5 cm. in diameter, arose from the fundus.

The surface of both tumors was necrotic, but on section they presented a spongy, granular appearance, and were of a dark-red color. The uterine mucosa could be seen to cover all the rest of the uterine cavity, and to extend a short distance up the sides of the tumor.

In each lung there were forty to fifty metastases, varying from a pea to a walnut in size. For the most part they were of a bright red color, and closely resembled placental tissue in appearance. Some of the larger nodules presented a grayish white necrotic center. There were numerous smaller metastases of the same character in the kidneys, spleen, liver, and left ovary.

Microscopic examination of the uterine tumors and the metastases from the various organs showed that they all presented the same structure. They all presented a marked alveolar and cavernous structure, and consisted of cavities of varying size and shape, which were filled with blood and threads of fibrin, and were separated from one another by thin bars of tissue. At the first glance these bars of tissue were seen to be made up of very large, closely packed epithelioid cells, which resembled very closely the large cells of the decidua.

None of the cavities contained any trace of endothelium, and nowhere in the tumor could any trace of blood or lymphatic vessels be discovered.

Upon closer examination, however, it is seen that the tumor is made up of two varieties of cells, portions of it consisting of individual cells, which vary from round or polygonal to spindle in shape, according as they lie free in the blood or are closely packed together. They vary greatly in size, some containing a single nucleus, others two or

more, while some appear as typical giant cells. Their nuclei stain intensely and present well-marked nucleoli. In fact, they correspond in every particular to epithelial cells.

Other portions of the tumor are composed of larger or smaller protoplasmic masses or bands, in which large, irregularly shaped, and deeply staining nuclei are deposited without any trace of division into individual cells. We sometimes find thin bands of protoplasm, in which there is a single row of nuclei, which occupy almost its entire width; and in other places we find long, fingerlike, villous processes and irregularly shaped masses of protoplasm, in which large numbers of irregularly shaped nuclei are deposited without any definite arrangement.

The protoplasm of these masses is granular, and contains many vacuoles.

These protoplasmic masses and bands correspond in every particular with the outer layer of epithelium which covers the chorionic villi, and to which the term syncytium has been applied. And to us there is no doubt as to their identity.

Careful study of our specimens has led us to believe that what appear as individual cells in other parts of the tumor are only cross or oblique sections through syncytial masses, sections through narrow bands giving rise to mononuclear cells, and sections through larger masses giving rise to multinuclear cells and giant cells.

Nowhere in the tumor have we been able to find any trace of a reticulum between the cells, nor any trace of a ground substance.

We believe with Kossmann, Merttens, and other recent observers, that the syncytial covering of the chorionic villi is of maternal origin, and is produced by a transformation of the surface and glandular epithelium of the decidua. Our tumor, accordingly, appears to be of epithelial and maternal origin, and is perhaps best classed among the carcinomata.

More or less similar cases have been described by Meyer, Gottschalk, and Fraenkel, but they all hold to the foetal origin of the chorionic syncytium, and accordingly believe that they have to deal with tumors of foetal origin which had been ingrafted upon the mother and were therefore parasitic.

Ahlfeld and Marchand have reported a case very similar to ours which followed a tubal pregnancy; and while they consider with us that the syncytium is of maternal origin, they believe that the individual cells in the tumor are derived from Langhans' cell layer of the chorion, and therefore are derived from the foetal ectoderm.

While our case and those just referred to correspond in every particular in the gross appearance and clinical history to the cases reported by Sanger and others, they differ very materially from them in their minute structure; for the latter class of cases appear to be made up of decidual cells, and therefore are of connective-tissue origin and belong among the sarcomata.

Koettnitz and Schmorl have reported cases which they consider are composed of both maternal and fetal tissues, and we believe that Menge's case is also composed of syncytium and decidual cells, and is consequently a mixed tumor.

Cases belonging to these several groups have been described under all sorts of names, such as deciduoma malignum, sarcoma deciduo-cellulare, sarcoma chorion-deciduo-cellulare, blastoma chorion-deciduo-cellulare, hemorrhagic infectious sarcoma, sarcoma chorii, carcinoma chorii, and placental papilloma.

It is evident, from the differences in nomenclature, that the interpretation of these cases is not easy, and that they must differ considerably among themselves. But, in view of the marked similarity in their gross appearance and clinical history, it seems to us that it would be well if they were classed together under some generic name, so that clinicians may speak of them without being compelled to go into the depths of pathological anatomy and embryology.

We accordingly believe that the term deciduoma malignum, which Sanger first suggested, should still be employed to designate them from a clinical standpoint, and the others reserved for those who desire to go into the anatomical minutiae; for we must remember that the decidua in its broadest sense consists of both a stroma and epithelial and glandular structures; in other words, it represents the modified uterine mucous membrane. And tumors may be derived from either one or both of these tissues, some being derived from its epithelial portions, as in our case, and others entirely from its connective-tissue portions—*i. e.*, the true decidua cells, as in the cases of Sanger and others; while others may be derived from both the epithelial and connective-tissue portions and thus form mixed tumors.

No doubt these cases are of much more frequent occurrence than is generally supposed, many cases, no doubt, having been described under other names. By a careful search through the literature we were able to find twenty-seven cases which certainly belong in this category, and also seven others which probably do.

It is interesting to note how much more frequently they have been described in the last few years, since general attention has been di-

rected toward them. Thus Sanger reported his case in 1889, and following it a single case was reported in each of the years 1890, 1891, and 1892. In 1893 five cases were reported, in 1894 seven cases, while six cases have already been reported since January 1, 1895.

The etiology of these growths, like all other malignant tumors, is as yet unknown.

They all follow some form of pregnancy, either after full-term labors, abortion, or hydatidiform moles. Of twenty-nine cases in which definite information was given as to this point, fourteen followed hydatidiform moles, fourteen full-term labors and abortions, and one a tubal pregnancy.

It is evident that the mole stands in some relation to the growth, but it is impossible at present to state whether as cause or effect.

The most characteristic clinical feature of the growths is that they always occur before the menopause, and most frequently in women under thirty years of age ; thus, one case occurred at seventeen years, fourteen between twenty and thirty, six between thirty and forty, five between forty and fifty, and one over fifty years.

In many cases uterine hemorrhage is a prominent symptom, and when it occurs is of an intermittent and gushing character. But in some cases it never occurs, and attention is first called to the disease by the occurrence of metastases in some other organ.

Thus, in our case, as well as those of Koettnitz, Ahlfeld, and others, the occurrence of vaginal metastases was the first indication of the disease. In Sanger's case, metastases in the iliac fossa and lungs simulated phthisis, and masked the real nature of the disease.

It is interesting to note that vaginal metastases occurred in fifty-eight per cent. of the reported cases.

Death usually follows in from three to six months after the pregnancy or mole, though some cases have lasted for a longer time.

The point of greatest practical interest is that a positive diagnosis can be made from scrapings from the uterus. And in view of the rapidly fatal course of the disease and the extremely early occurrence of metastases, we will do well to regard with suspicion every case of hemorrhage which occurs during or closely following the puerperium, and immediately curette the uterus and submit the scrapings to a competent microscopist, for it is only in this way that we can detect the disease before the case becomes inoperable.

In view of the extreme malignancy of these growths, total vaginal extirpation of the uterus is the only rational treatment ; but it is evi-

dent from the history of our case, in which vulval metastases made their appearance two weeks after labor, that many cases may occur in which the early occurrence of metastases will render all treatment futile.

Abstract of a paper entitled

THE VALUE OF GAUZE DRAINAGE.

BY HENRY C. COE, M. D., NEW YORK.

The reader referred in his introduction to the history of drainage in general and to the fact that the indications were now more strictly defined than formerly. He called attention to the fact that in his paper he would consider only two applications of drainage—that of the uterus and of the pelvic cavity. Having been led to believe that the value of gauze as a drain had been exaggerated, he had addressed circulars to a number of prominent gynecologists, and had found that there was a wide difference of opinion among men whose results were equally good. Many had the utmost confidence in gauze, which they used almost exclusively, others preferred tubes, and a third class rejected drainage entirely. But it was curious to note that some of the latter always inserted gauze into the uterus after curettage, even in non septic cases. It was not the writer's purpose to seek to depreciate the value of gauze in pelvic surgery, but rather to seek to decide the question what it accomplished—whether it acted as a true drain, or merely as a tampon.

The action of gauze when introduced into the uterine cavity was first considered. This was different according to the size of the uterine cavity and the condition of the muscular walls. If the latter were flabby, it undoubtedly stimulated the organ to contract. After curettage and irrigation of the non-septic uterine cavity this was its principal function. There was certainly nothing to drain away except blood and serum, and so far from maintaining patency of the canal it was a recognized clinical fact that it usually plugged the os and prevented fluid from escaping, so that drainage was more free after removal of the gauze. As a hæmostatic in cases of abortion and after removal of neoplasms, the gauze acted purely as a tampon, besides favoring uterine contraction. In septic cases, both puerperal and non-puerperal, it was only the serum that escaped through capillary drainage; fragments of decidual membrane, sloughing tissue, etc., were expelled

after removal of the gauze. It was frequently noted clinically that the hoped-for fall of temperature after curettage only occurred after the tampon was withdrawn. The reader believed that thorough irrigation with peroxide of hydrogen after curettage was followed by as good results as when the tampon was used, or even better.

In regard to drainage of the pelvic cavity with gauze, the reader believed that it had grown in favor on account of the increasing popularity of the vaginal route. In vaginal hysterectomy, however, gauze was to be regarded as a tampon rather than a drain. It was used in abdominal surgery for three distinct purposes: 1. To cover extensive raw surfaces, both to check obstinate oozing and to prevent intestinal adhesions. 2. To isolate septic foci from the general peritoneal cavity by favoring the formation of adhesions. 3. To drain away septic fluids. With regard to the first two there was no doubt as to the effect of the tampon, especially when a large amount of gauze was employed. That septic material was removed to any extent by capillary drainage was doubtful. Certainly, thick pus, fibrinous exudates, and sloughs were rather prevented from escaping by the presence of the tampon. True drainage took place only during the first twenty-four or thirty-six hours, and consisted in the escape of thin, serous fluid, which might constitute a favorable nidus for the development of septic germs. The most rational way of favoring such drainage was to maintain a free opening in the vaginal roof. Thorough drainage through the abdominal wound could not be expected.

In short, the reader believed with Sanger that the expression "gauze drain" was a misnomer, since one should speak rather of the "gauze tampon." The following practical deductions were made: 1. The introduction of gauze into a non-puerperal uterus purely as a drain is unnecessary and even objectionable. 2. The gauze tampon within a large, flabby, septic uterus after curettage promotes contraction of the organ, but often prevents the escape of septic matter, which is expelled only after removal of the gauze. 3. Tamponade of the pelvis with gauze is an invaluable means of arresting obstinate general oozing. 4. The gauze not only prevents the formation of intrapelvic intestinal adhesions, but favors the development of plastic lymph around septic foci, thus shutting them off from the general cavity. 5. Capillary drainage with gauze (especially *per vaginam*) serves to remove a certain amount of serum which might serve as a nidus for germs, but little septic material besides.

The remaining papers were read by title.

THE SYMPHYSEOTOMIES OF THE UNITED STATES
AND OF CANADA.

BY ROBERT P. HARRIS, M. D., PHILADELPHIA.

See page 788.

Abstract of a paper entitled

LATE INFECTION IN THE PUERPERAL STATE: BEING
A PLEA FOR THE ROUTINE MANUAL EXAMINATION
OF THE INTERIOR OF THE UTERUS AFTER
THE COMPLETION OF THE THIRD STAGE OF LABOR.

BY EGBERT H. GRANDIN, M. D., NEW YORK.

The paper was prefaced by the recital of a number of cases of late infection seen in consultation, where the family physicians were satisfied that the third stage of labor had been thoroughly completed, and yet on exploration of the uterus on the development of symptoms of septic infections, portions of membrane or of placenta were removed. All the cases recovered, but only because the recognized method of treatment was early applied. After calling attention to the fact that to-day septic infection was considered evidence of careless or of ignorant or of dirty obstetrics, and after dwelling on the fact that modern obstetrics looked beyond the immediate welfare of the woman, the reader expressed the opinion that many a case of so-called fungous endometritis and many an instance of diseased tubes and ovaries, with *sequelæ*, might be traced to leaving in the uterus portions of membrane or of placenta which did not give rise to symptoms while the woman remained under the care of her attendant, or else the symptoms were so slight as not to attract his attention. He dwelt on the fact that during the past years, when so many men had been anxious to become gynæcologists, the far more important branch of medicine—obstetrics—had been neglected, and yet, if the lesions following delivery were carefully repaired, and if the labor were conducted with that asepsis which modern methods called for, and if the uterus were entirely emptied of all remnants of membrane and of placenta, then it was at once evident that there would remain very little for the gynæcologist to do. Indeed, the major part of the ills

which eventually drove women to the gynæcologist could be traced to bad obstetrics. The reason was urgent, therefore, why the obstetrician should strain every nerve and resort to every means for leaving the puerpera in the best possible condition. As a means toward this end the reader advocated manual examination of the interior of the uterus in every case after the termination of the third stage of labor, in view of the fact that instances were far from infrequent where, although the placenta and the membranes seemed intact, at a late date symptoms of septic infection leading to investigation of the uterine cavity revealed remnants which were the source of the infection. Immediately after delivery it was a comparatively easy matter to examine the interior of the uterus, since the parturient canal was wide open; certainly it was easier to do it then than when later symptoms of infection forced the procedure upon us. The only possible objection to this measure was the fact that it entailed the insertion of the hand into the uterus. In his opinion, this objection carried absolutely no weight when compared with the possible consequences of late puerperal infection. The day was ripe for *preventive* obstetrics, and this recommendation was in line with this laudable aim, since it took account of the future of the woman and not alone of her present.

ARTIFICIAL ABORTION.

BY HENRY J. GARRIGUES, M. D., NEW YORK.

See page 818.

Dr. LUSK exhibited illustrations of the successive steps in symphysiotomy and explained them.

On motion, a vote of thanks was extended to President Gilman and the authorities of the Johns Hopkins Hospital for their courtesy in extending the hospitality of their hall.

The Society tendered to the Baltimore Obstetrical Society an expression of their appreciation of the constant courtesies so freely extended.

On motion, a vote of thanks was extended to the retiring president for his uniform courtesy to the fellows.

The PRESIDENT, Dr. MANN, then addressed the Society briefly and introduced Dr. POLK, the President-elect.

Adjourned.

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